Fall 2021

CONNECTIONS

CHILD NEUROLOGY SOCIETY

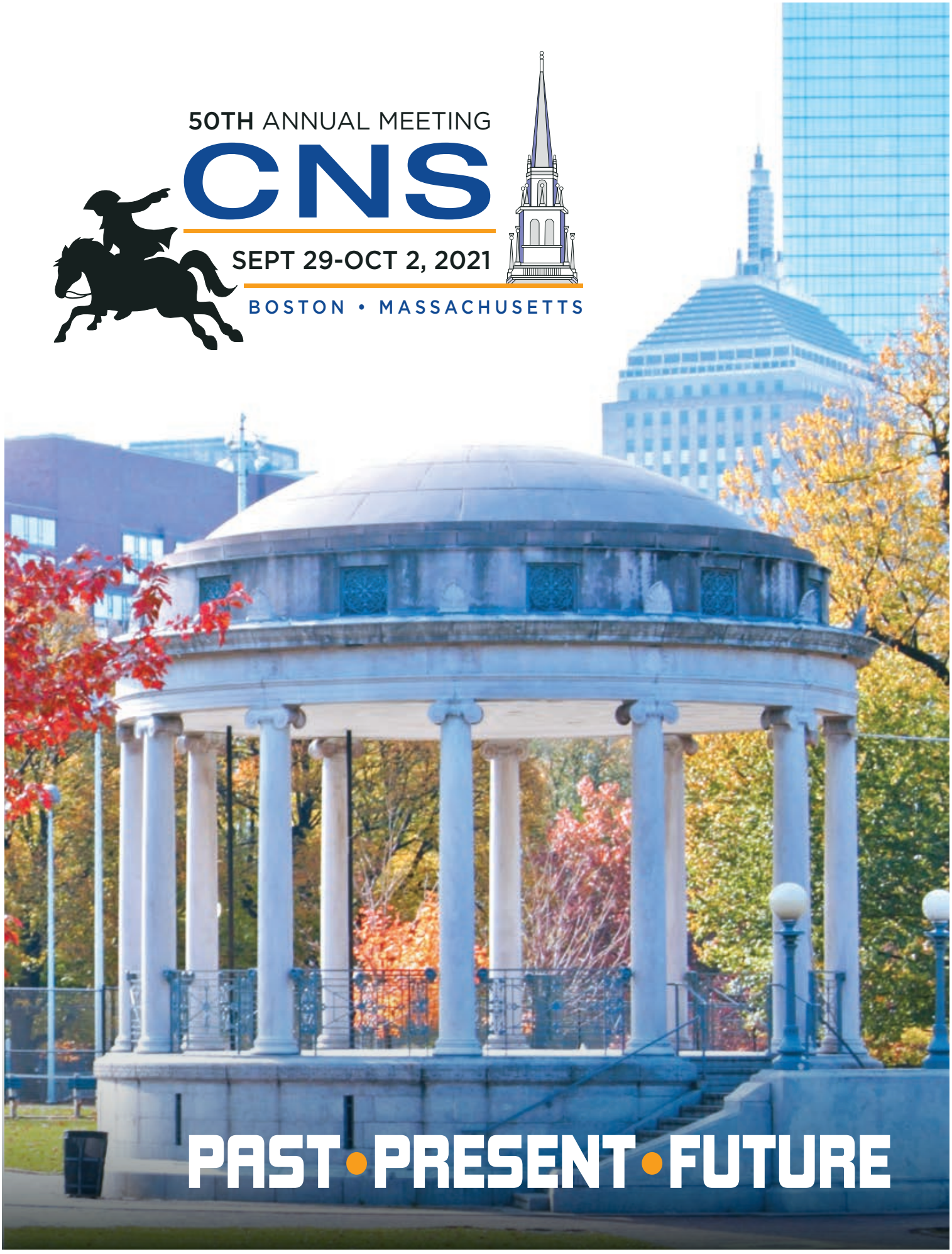
Bringing CNS Members Together to Make Children's Lives Better

50TH ANNUAL MEETING

CNS

SEPT 29-OCT 2, 2021

BOSTON • MASSACHUSETTS



PAST • PRESENT • FUTURE

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CONNECTING WITH COLLEAGUES
Letter from the Presidents

Phillip L. Pearl MD, President

There will be numerous presentations during the Legacy Luncheon, but simply being in the room, filled with our founders in body and spirit, will be the professional thrill of a lifetime. If you are able to travel to Boston, you will not want to miss this event.

CNS Executive Director Roger B. Larson told us today during our weekly e-meeting that he was reviewing CNS website video-recordings and heard an especially insightful and prescient statement from the first president, Ken Swaiman, in conversation with fellow "old lions," Paul Rosman and Dean Timmons: "The best way to keep a society going is to pretend it's been going for fifty years before."

Well, there is no further need to pretend. Our first leaders were visionaries and we are here as an organization to celebrate the accomplishments of the last half-century. We are fast approaching our 50th anniversary meeting, and the enthusiasm is building. Over 900 have registered to come to Boston already, and we hope conditions will reverse and improve sufficiently by the last week in September to encourage more to make a last-minute decision to join us as we celebrate our tailored theme for 2021: *The CNS at 50 – Past, Present, and Future.*

The Kenneth F. Swaiman Legacy Luncheon will honor great contributors to the field and the Society, and a chance to celebrate the release of a new book: *Child Neurology: Its Origins, Founders, Growth, and Evolution*. As with the first edition of The Founders and multiple editions of the Swaiman text, Steve Ashwal (our 21st President) has splendidly and meticulously added 138 new biosketches to the original 124, along with a new section featuring 14 masterful overviews, with many authors contributing. And in an undeniable once-in-a-lifetime opportunity, Professor Shaul Harel, recipient of the 2011 CNS Gold Humanism Award and Past President of the International Child Neurology Association (ICNA), will travel to Boston along with his wife, Dalia, on the occasion of the translation into English of his biography, *A Child without a Shadow*. Purchase your copy NOW (it is available on Amazon.com) and have him sign it in Boston. No story could be more poignant or profound to a pediatric neurologist than that of a child orphaned by the Holocaust rising to become the founder of child neurology in the state of Israel. There will be numerous presentations during the luncheon, but simply being in the room, filled with our founders in body and spirit, will be the professional thrill of a lifetime. If you are able to travel to Boston, you will not want to miss this event.

There will be great symposia and seminars, all topical and timely, from COVID-19 Neurology to Neurocritical Care, Developmental Epilepsy, Neurogenetics, and more. A Neuro-Humanism seminar, *New England Music & Muses*, will feature a fitting prelude to the meeting, with David Urion teaming up again with Phillip Pearl (our 30th President) to offer musical-literary pairings captured on film from a studio in Cambridge, MA along

Bruce H. Cohen MD, President-Elect

There is no field in medicine more focused on the health and well-being of vulnerable humans than pediatric neurology. We look forward to kicking off our 50th year as the primary professional association of pediatric neurologists as we enter a revolutionary hope-filled era of promising targeted therapies benefiting our patients.

with a Berklee College of Music faculty ensemble. There will be a CNF symposium on the diagnostic odyssey, a clinical research workshop, thanks to the CNS Research Committee working in tandem with the CNF, and splendid social events. The CNS meeting is designed to combine scientific and social opportunities as, after all, everyone needs (a) society and this is the one for pediatric neurology.

This joint *CNS Connections* Letter from the Presidents presages the meeting and the transition from the current president to the president-elect. Over the last 10 months the two of us have been meeting with Roger Larson on a weekly basis, if not more, planning this meeting and the many activities of the CNS and its interrelationships with other societies, most notably the AAN, with common ground and support statements, and the ANA with the co-publication of the *Annals*. We also have made strides with planning for a new *Annals* journal focusing on Child Neurology and look forward to reporting on more progress in the near future. The CNS has successfully launched the Leadership, Diversity, and Equity task force under the guidance of Rujuta Bhatt Wilson and Executive Board members Audrey Brumback and Nancy Bass, with an editorial describing this further in this month's issue of the *Annals*.

There is no field in medicine more focused on the health and well-being of vulnerable humans than pediatric neurology. We look forward to kicking off our 50th year as the primary professional association of pediatric neurologists as we enter a revolutionary hope-filled era of promising targeted therapies benefiting our patients even as the world grapples with the continuing pandemic, economic uncertainty, health care disparities, and recurring challenges of racism, prejudice, and bias. As we stated in the August 2020 *Annals* editorial on institutional racism, the CNS must model a possible solution for these moral vices and we must continue our work together.

Much of the history of our society has been touched on by Roger Larson in our A through Z daily briefings – and we hope you are enjoying reading this history in a new literary form. Roger calls these "muses" but he is a brilliant author and has served as our Executive Director for the last nine years with nearly 40 years of involvement with the CNS. His reflections offer an account of our history that few can match.

We are looking forward to a splendid meeting this year, whether you will join us masked and in person, or virtually, as we carry the Society forward into the next fifty years.

Q&A with Outgoing CNS President Phillip L. Pearl, MD

By Daniel J. Bonthius, MD, PhD | *CNS Connections* Editor

Phillip L. Pearl, MD

QUESTION | ***What is the best thing about being President of the CNS?***

The best aspect of being CNS President is encapsulated in the apt name for the newsletter that you edit, Dan, "Connections." Those connections have been so fulfilling. There is nothing like sending out an *eConnections* and then hearing back from colleagues near and far, including past residents, fellows, and research mentees, how the message impacted or inspired them.

When I was first elected CNS President, I felt quite honored but also somewhat overwhelmed, with something like the imposter syndrome. My first reaction was to write to each living past-president for their advice. The responses were wonderful, filled with a sense of meaning from each one. But the other interesting sense of the responses was that there was no prescriptive model for this role, and that it was individualized based on one's own style and personality. So, I tried my best to "connect" with the membership in every possible way, ultimately hosting a series of initiatives that turned out to be in some ways responsive to the raging pandemic during my term and in other ways unrelated to the pandemic and meant to push the field forward as we enter our second half-century.

QUESTION | ***What has been the most challenging aspect?***

This has been planning for two monumental meetings, the combined CNS-ICNA conference of 2020 and the 50th Anniversary conference of 2021, with uncertainty as to whether they would be in-person, virtual, or hybrid in format and scope.

QUESTION | ***What is your proudest accomplishment as President of the CNS?***

I am proud of how we rolled out one initiative after another in response to the pandemic and the social strife during this time in the US and throughout the world. This encompassed multiple areas, from a telemedicine toolkit to return-to-practice manual. We published on medical ethics and precious resource allocation during the time of a pandemic in *Pediatric Neurology*, and change in the standard of care for infantile spasms in the *Journal of Child Neurology*. At the request of the editorial board of *Developmental Medicine and Child Neurology*, I published an editorial on Child Neurology, COVID-19, and Crisis in Society as a representative of the CNS, and helped to develop, with Jo Wilmshurst from ICNA, a new working group of child neurology association presidents from across the world that has been meeting regularly over the past year. Furthermore, we published editorials from the CNS in the *Annals of Neurology* on Infantile Spasms, Institutional Racism, Neuro-Diversity, and announcement of our newly established Task Force on Leadership, Diversity, Equity, and Inclusion.

The other major set of initiatives was to renew and uphold our special arrangement with the ANA, Wiley Publishers, and the *Annals of Neurology*. I was not about to negotiate a divorce from these important partners, but instead worked over a protracted period, with many conversations and meetings, to strengthen these relationships. Once we renewed this contract, with both a strong financial outcome for the CNS and ongoing strong pediatric neurology coverage in the pages of *Annals*, including the series

of editorials mentioned above, I forged ahead to the conceptualization of a new journal in the *Annals* series that will evolve into an "annals of child neurology" if current discussions are successful. I will continue on this path as immediate Past-President, as already planned with President-Elect Bruce Cohen and Roger Larson, Executive Director.

Between us, and I suppose now for the pages of *CNS Connections*, Roger has not yet announced his previously anticipated retirement and instead has authored a magnificent acrostic of CNS history in the 50 days leading up to this 50th anniversary meeting. No other person on earth could display that level of institutional knowledge and concinnity simultaneously. I like to think that our weekly (and sometimes more) meetings over the past two years (and multiple daily e-mails) had something to do with keeping him around!

QUESTION | ***What effect has COVID had on the CNS and on the field of child neurology?***

As with all of medicine, the effects of the pandemic have changed our daily lives in every possible way. One way in particular was our response to the diagnosis and management of infantile spasms needing an almost immediate turnaround, from reliance on in-patient video-EEG hospitalizations and protracted training for ACTH administration to a shift to outpatient EEGs, reliance on home cell phone videos produced by parents, and switch over to the more practical oral prednisolone as the primary treatment. Recommendations were relegated to those for the time of a pandemic and others as enduring post-pandemic.

QUESTION | ***What are the biggest challenges facing the field of child neurology?***

There are many challenges. Child neurology is at the fulcrum of the genetically targeted therapies that are just about to roll out, from enzyme replacement to gene therapy to antisense oligonucleotides and more products of gene editing. We are going to have to somehow "warehouse" our approach to shift from one-to-one handling of gene variants to a more efficient way of handling this ever increasing amount of information.

QUESTION | ***What actions could we child neurologists take to improve our field?***

On the one hand, stay relevant. Adult neurologists, physiatrists, neuro-radiologists, geneticists, developmental pediatricians, neuropsychologists, psychiatrists, etc are terrific colleagues but cannot replace pediatric neurologists and NDD specialists. On the other hand, partner with each of these fields, as well as industry for that matter, to push our field forward and improve outcomes. Ultimately, it comes down to outcomes.

QUESTION | ***In what way is the CNS most valuable to its members?***

The CNS is our home society. While I highly value my associations and the many hats I wear with other organizations, including the AAN, AAP, ABPN, ACNS, AES, ANA, ASET, ICNA, SSIEM, and even more (you get the drift), "home is home."

QUESTION | ***What actions could we take to improve the CNS?***

We have committed members, from all career ages and stages. I'd suggest implementation of a more aggressive committee work structure as well as SIG level activity. We have had wonderful initiatives and productivity from the Electronic and Communications Committee, Practice Committee, and Research Committees in particular the past two years, including the planning of a special workshop this year on clinical research from the Research Committee along with the Child Neurology Foundation. We have had stellar junior investigators form a Young Investigators SIG. The Leadership, Diversity, Equity, and Inclusion Task Force has gotten off to a rousing start, from a roll out of sub-committees to the editorial just published in the *Annals*. I would try to promote more excitement and programming from all committees and SIGs.

Another important initiative over the past two years was the formation of a work group addressing the CNS-CNF relationship, which was strained in the past but has been growing in strength and enthusiasm. This group had representatives from both organizations, and co-chaired by CNS Past President Jon Mink and CNF (and CNS) Past President Ann Tilton, and with both groups working toward the interdependence that will strengthen each. It has been fun partnering with Scott Pomeroy as President of the CNF during this time as we could assure together that the two organizations were working in a mutually re-enforcing way.

QUESTION | ***What advice would you give to a medical student interested in a career in child neurology? What are the pros and cons of child neurology, relative to other fields of medicine?***

Pediatric neurology, as with all of medicine, is a wonderful way to spend your life and there is no question that if you are so inclined and able, you should enter the field. There is no point denying that neurology, including child neurology,

CNS Boards (2018-20) and staff: Bottom (L-R): Donald Gilbert, Bruce Cohen, Phillip Pearl, Lori Jordan, Nancy Bass
Top (L-R): Sue Hussman, Michael Shevell, Nigel Bamford, Jonathan Mink, Roger Larson, Mark Wainwright, Theresa Trapilo

attracts a certain "type" of student. When I was in medical school and residency and trying to decide my own path, neurology had a reputation for attracting a very small percentage of medical school classes, typically 1%, and they tended to be the introverted bibliophiles or sometimes the renaissance type. But are those biases always true? Of course not. Pediatric neurology is exploding into not only the most intellectually challenging but also therapeutically driven subspecialty of the modern genomic era. Having said that, the population is aging and dementia is the ultimate challenge of modern medicine, so adult neurology is not such a bad choice, either.

QUESTION | ***What will you do with your spare time when you are no longer President of the CNS?***

I'm not sure the spare time index in my life will change a great deal. This question reminds me of a poem or perhaps it was prose from our colleague, Nina Schor, who replied to a similar question that taking time off would wait for retirement, if then. To my wife's chagrin, I may add a third jam session each week since I like to cover multiple instruments, and currently there is an opening on drums, being that my current two are on keyboard. I have to add that our production of literary-musical pairings, thanks to the enormous talent of my colleague and local Boston Children's/Harvard bard, David Urion, as well as my musical friends and colleagues at the Berklee School of Music, has been a true joy. I hope everyone clicks on the links from last year's CNS-ICNA meeting and this year's Golden Anniversary meeting to hear how we focused on American Creativity, Ingenuity, and Diversity to welcome last year's international meeting, and more favorites with New England history and charm to accompany this year's very special conference.

CHILD NEUROLOGY SYNAPSES

"Iron out the differences": iron pathway proteins are associated with different outcomes in posthemorrhagic hydrocephalus

Daniel J. Bonthius, MD, PhD, *CNS Connections* Editor

Longitudinal CSF iron pathway proteins in posthemorrhagic hydrocephalus: Associations with ventricle size and neurodevelopmental outcomes. JM Strahle, KB Mahaney, DM Morales, et al. Annals of Neurology 90: 217-226, 2021.

Daniel J. Bonthius MD, PhD

What the researchers did:

Germinal matrix hemorrhage-intraventricular hemorrhage (GMH-IVH) is a common cause of substantial morbidity and mortality in prematurely born infants. Large proportions of newborns with GMH-IVH develop post-hemorrhagic hydrocephalus. This subsequent development of hydrocephalus is an ominous event because it portends a lifelong requirement for shunts and is associated with poor neurodevelopmental outcomes. When blood enters the ventricular system, the red blood cells break down, thus releasing RBC contents, including hemoglobin, iron, and bilirubin. Iron and the iron pathway proteins have been implicated in the pathogenesis of post-hemorrhagic hydrocephalus. However, how iron pathway protein concentrations change over time and whether their presence is related to neurodevelopmental outcomes are unknown. For this reason, Dr. Jennifer Strahle at Washington University in St. Louis and her co-investigators from seven neurosurgical centers across the US conducted a prospective cohort study investigating red blood cell breakdown and iron handling in prematurely born babies undergoing early treatment for posthemorrhagic hydrocephalus. In addition, they investigated whether the iron pathway proteins are associated with neurodevelopmental outcome. The investigators measured concentrations of iron metabolism markers (total iron, hemoglobin, bilirubin, ceruloplasmin, ferritin, transferrin, haptoglobin, hemopexin, and hepcidin) in CSF samples in babies with posthemorrhagic hydrocephalus. The measurements were made twice – first at the time that the babies underwent temporary CSF diversion for their hydrocephalus (reservoir or subgaleal shunt) and again at the time that the babies underwent a permanent procedure (shunt or third ventriculostomy). They measured ventricular size by cranial ultrasound and measured CSF concentrations of iron metabolism markers by enzyme-linked immunosorbent assay (ELISA).The investigators determined neurodevelopmental outcome on each of the patients at age 15-30 months with the Bayley Scales of Infant Development III, which assesses cognition, language, and motor function.

What the researchers found:

The median gestational age at birth for the studied infants was 25 weeks, and all of the included babies had grade III or grade IV IVH. The median corrected gestational age at the time of the temporary CSF diversion was 31 weeks, while the age at the time of the permanent CSF diversion was 41 weeks. Thus, approximately 10-11 weeks passed between the time of the first and second CSF measurements. CSF levels of hemoglobin, iron, ferritin, bilirubin, and total protein decreased substantially between the time of temporary CSF diversion and time of permanent CSF diversion. In contrast, the heme scavenger protein, hemopexin, rose

significantly during this same time interval. There was no association between CSF levels of any of the iron pathway markers and ventricular size at the time of the temporary (first) CSF diversion. However, at the time of the permanent (second) CSF diversion, CSF ferritin levels were associated with larger ventricles, while CSF hemopexin levels were associated with smaller ventricles. Furthermore, at the time of the permanent CSF diversion, higher CSF levels of transferrin were significantly associated with improved scores on the Bayley neurodevelopmental test. By measuring the change in levels of the CSF iron markers and comparing those changes with Bayley scores, the investigators found that larger decreases in CSF ferritin over time were associated with improved cognitive and motor scores. Likewise, increases in CSF transferrin over time were associated with improved cognitive, language, and motor scores.

What the research means:

This research study showed that, for babies with posthemorrhagic hydrocephalus, longitudinal changes in CSF concentrations of iron handling proteins are associated with neurodevelopmental outcomes. In particular, increasing concentrations of CSF transferrin and decreasing concentrations of CSF ferritin are associated with improved neurodevelopmental outcomes. The results are fascinating and suggest that brain function following intraventricular hemorrhage in babies is somehow impacted by the iron derived from the breakdown of red blood cells and by the concentrations of iron pathway proteins. An important limitation of this study, however (and one that is not mentioned by the authors) is the fact that all of the relationships demonstrated in this study are correlations and do not prove causation. Thus, it is possible that the neurodevelopmental outcomes of babies with posthemorrhagic hydrocephalus are statistically correlated with concentrations of iron handling proteins but not directly affected by them. However, the authors offer some intriguing alternative explanations: Perhaps iron pathway proteins interact with the ventricular ependyma or with cells of the subventricular zone to alter neurodevelopment. Perhaps local iron neurotoxicity impairs neurogenesis and gliogenesis within the germinal matrix and subventricular zone, thus worsening cognitive and motor outcomes. This study showed that there is a relationship between iron handling proteins and neurodevelopmental outcomes in posthemorrhagic hydrocephalus. Understanding the mechanisms underlying these relationships may someday allow child neurologists to improve these outcomes.

CHILD NEUROLOGY SYNAPSES

Progress in the treatment of neuromyelitis optica

Daniel J. Bonthius, MD, PhD, *CNS Connections* Editor

Long-term safety and efficacy of Eculizumab in aquaporin-4 IgG-positive NMOSD.
DM Wingerchuk, K Fujihara, J Palace, et al. Annals of Neurology 89: 1088-1098, 2021.

What the researchers did:

Neuromyelitis optica spectrum disorder (NMOSD), also known as "Devic Disease," is a disorder of the central nervous system, marked principally by inflammation of the optic nerves and spinal cord. Although it was once considered a monophasic disease consisting of a single episode with no recurrence, the disease is now recognized as chronic, with repeated attacks separated in time by remissions. The spectrum of NMOSD includes an autoimmune version induced by antibodies directed against aquaporin-4, a channel that moves water through cell membranes. The aquaporin-4 antibodies trigger the complement cascade of the immune system, thus inducing inflammation and damage to the central nervous system. Because complement plays an integral role in the pathogenesis of this disease, it was reasoned that a complement inhibitor could ameliorate the disorder. Eculizumab is a humanized monoclononal antibody that functions as a terminal complement inhibitor. A previous phase III clinical trial of eculizimab (called the PREVENT study) demonstrated that eculizimab is effective for the treatment of aquaporin-4-IgG+ NMOSD, as it reduced the risk of relapse by 94% compared with placebo. However, patients in the PREVENT study received eculizimab for only a limited time. Whereas NMOSD is a chronic condition, it is imperative to study eculizimab in the long term for patients with aquaporin-4-IgG+ NMOSD. Thus, Dr. Dean Wingerchuk of the Mayo Clinic and his co-workers in the PREVENT Study Group conducted an open-label extension examining the long-term safety and efficacy of eculizimab for patients with NMOSD induced by aquaporin-4-IgG antibodies.

What the researchers found:

This open-label extension study included 137 patients (all adults), who were monitored for a median of 133 weeks, thus providing a combined total of 362 patient-years of monitoring. Because patients deficient in complement are at high risk of Neisserial infections, all patients were vaccinated against Neisseria meningitidis before treatment commenced. The rate of adverse events associated with eculizimab treatment were low and were similar to the rate of adverse events that had been seen in the placebo arm of the earlier PREVENT trial. The most common adverse events included headache, upper respiratory tract infection, nasopharyngitis and urinary tract infection. The rate of severe adverse events was very low and was, again, similar to that of the placebo group in the PREVENT trial. The most common severe adverse events were pneumonia, acute cholecystitis, and urinary tract infection. Despite the fact that eculizimab impairs the immune system by targeting complement, serious infections did not occur more often in the eculizimab group than in the placebo group. Only one patient developed a Neisserial infection, and it was effectively treated with antibiotics. Long-term eculizimab was not only safe but was also effective. Eculizumab substantially reduced the relapse rate of NMOSD. Throughout the PREVENT trial and its open-label extension, greater than 94% of the patients remained relapse-free. In contrast, during the 24 months before the PREVENT trial, 56% of patients had experienced relapse of optic neuritis, and 81% had experienced relapse of transverse myelitis. Treatment with eculizimab also allowed many patients to decrease their use of other immunosuppressive agents, including steroids and cyclophosphamide.

What the research means:

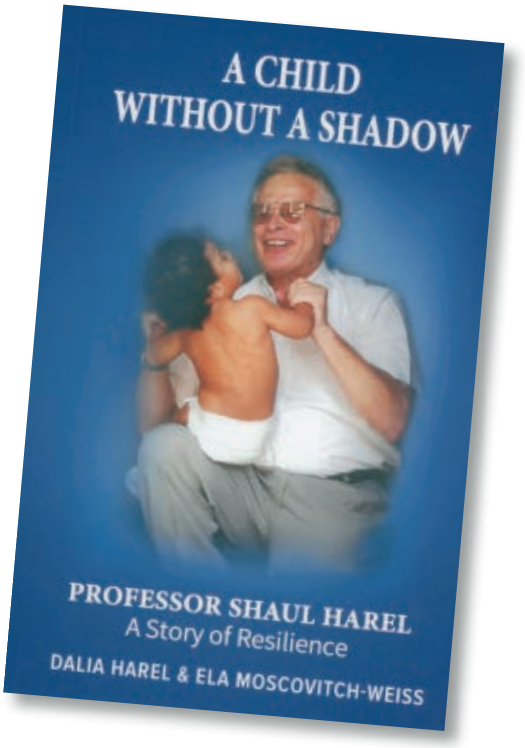
This open-label extension trial showed that eculizimab is safe and effective for the long-term treatment of patients with aquaporin-4 immunoglobulin G-positive neuromyelitis optica spectrum disorder. Although this study was conducted exclusively in adults, children certainly suffer from NMOSD. It is likely that eculizimab would be as useful in children with this disorder as it is in adults. Over the course of the past two decades, substantial progress has been made in understanding the pathogenesis and natural history of neuromyelitis optica and in devising therapies for it. This study represents another important step forward in neurologists' fight against a life-threatening disorder.

Special Book Review

A Child Without A Shadow

by Professor Shaul Harel, Dalia Harel, and Ela Moscovitch-Weiss, English translation 2021

Reviewed by Phillip L. Pearl, MD



If there is a life story for child neurologists, as well as neuroscientists, physicians, and essentially all of humanity, this is it. Everyone will want to order a copy of this book (available on Amazon.com). Those coming to Boston for the CNS meeting will want to order their copy early and bring it with them: Dr. Harel plans to make the trip from Tel Aviv to Boston to attend the meeting, facilitating a once-in-a-lifetime opportunity to meet the author and return home with an autographed copy of this remarkable memoir.

This is the story of a 5-year-old Belgian boy, Charlie Hilsberg, whose family was murderously ruptured by the incomprehensible history of man's greatest inhumanity to man, the brutal Nazi regime and Holocaust. Charlie was separated from his parents, sister, and brother, all of whom were sent to the incinerators at Auschwitz and left to die of starvation by the sadistic pseudo-doctor, Johann Paul Kremer. Charlie was hidden in one temporary home after another, stripped of his history, identity, and "shadow," along with thousands of other Belgian children and millions of others throughout Europe. After five years of hiding and terror, he made his way to a center for Holocaust orphans and eventually settled in Israel, where he took the Israeli name, Shaul Harel.

The rest is history, from military service (including serious injury) to medical training and ultimately child neurology training in the US at Children's Hospital of Los Angeles and USC, interrupted by a return to military service during the Yom Kippur War of October 1973. Dr. Harel engineered the development of pediatric neurology as a recognized subspecialty in Israel, and along the way put Israel on the neurological map by hosting dozens of meetings and conferences. He rose up the academic and organizational ranks, eventually being elected President of the International Child Neurology Association (ICNA), and was awarded the CNS Arnold P. Gold Humanism in Medicine Award in 2011.

Ironically, there is much optimism throughout the book, and a strong salute to the Belgian resistance movement, in particular a young Mademoiselle Andree Geulen, who rescued Shaul and 3000 other Belgian children who were hidden by her and many other righteous individuals at great self-peril. There are moments when I found myself unexpectedly laughing and cheering, and of course others brought tears or were hair raising. There are many moving anecdotes, from Shaul visiting his beloved teacher for Holocaust orphans many decades later, to saving children left for dead when he recognized their prognoses required major correction, e.g., a child with isolated agenesis of the corpus callosum being left unattended, and an obtunded child post-trauma declared hopeless making a turnaround predicted by Dr. Harel. He fought the system in a David vs Goliath mode, enlisting a boy with cerebral palsy in the Israeli army against all odds, but making the boy's dreams come true, with the youth later recognized as the outstanding soldier of his unit.

There are terrifying and enraging moments, especially the scene of a German soldier casually smoking a cigarette while his family trembled, his mother muttering the Shema Yisrael prayer, with a rag stuffed in his small mouth. An amazing anecdote recounts an unplanned trip while in Belgium to view a traveling exhibition of photos and discovering pictures of his parents. Of all the many wonderful anecdotes, clinical cases, and conferences at Dr. Harel's direction, the most amazing was in 2007, when at age 70, he reunited dozens of the surviving hidden Belgian children, and finally felt, to some small extent, at home.

Available OnDemand on the Virtual Platform

"New England Music & Muses" is an 11-video series based on the combined words & music programming CNS President, Dr. Phillip Pearl and his colleague, Dr. David Urion put together for the weekly Boston Children's Hospital town hall meetings staged virtually by the Neurology Department beginning in the early days of the pandemic when, as David recalls, "we were struggling to figure out what to do, where we were going, how to navigate all this." That initial program at BCH became the basis of a highly popular video series staged as part of the Joint CNS-ICNA meeting last fall, "American Creativity, Ingenuity and Diversity." Grateful for and inspired by the positive response to that series, Drs. Pearl and Urion returned to the studio with world-class musicians from the Berklee College of Music, where Dr. Pearl is also on faculty, putting together 11 videos for those attending the 50th Annual CNS Meeting in Boston live, or virtually, to enjoy.

Artists:
Phillip Pearl, MD; Piano
David Urion, MD; Reader/Storyteller
Dan Fox; Bass
Yuron Israel; Drums
Jacques Schwarz-Bart; Saxophone

We are grateful to the following Gold Level Sponsors for financially supporting both this program and the full 50th CNS Annual Meeting: Eisai, Inc; Greenwich Biosciences; and Novartis Gene Therapies. Thanks as well to our local host, The Department of Neurology, Boston Children's Hospital.

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

1. Spring Can Really Hang You Up the Most
Muse: T.S. Eliot, The Waste Land
Music by Tommy Wolf; Lyrics by Fran Landesman
https://vimeo.com/585607042/3df3dfeb9a

2. Body and Soul
Muses: 1) Rumi, "Although the road is never ending...."; 2) Marge Piercy: "To Be of Use"
Music by Jonny Green; lyrics by Edward Heyman, Robert Sour and Frank Eyton
https://vimeo.com/587469838/4ba188e531

3. My Favorite Things
Muse: David Urion, "Reflection"
Music by Richard Rodgers; lyrics by Oscar Hammerstein II
https://vimeo.com/587478080/350305abab

4. When Sunny Gets Blue
Muse: James Baldwin, "Sonny's Blues" (excerpt)
Music by Marvin Fisher; lyrics by Jack Segal
https://vimeo.com/587471123/c44bb32422

5. Our Love is Here to Stay
Muse: Louise Glück, "The Red Poppy"
Music by George Gershwin; lyrics Ira Gershwin
https://vimeo.com/587495281/cf90e7fd1e

6. Someone to Watch Over Me
Muse: Naomi Shihab Nye, "Shoulders"
Music by George Gershwin; lyrics Ira Gershwin
https://vimeo.com/595530743/e1c5c0b208

7. God Bless the Child
Muse: Claudia Rankin, "Weather"
Music by Billie Holiday and Arthur Herzog
https://vimeo.com/595529730/ac29195c60

8. Batida Diferente
Muse: Wislawa Szymborska, "Psalm"
Music by Leny Andrade
https://vimeo.com/595528871/4164873549

9. Blue Bossa
Music by Kenny Dorham
https://vimeo.com/595526714/7ebc35157f

10. Blues in F
https://vimeo.com/595527504/3705401697

11. Softly as in a Morning Sunrise
Music by Sigmund Romberg and Oscar hammerstein II
https://vimeo.com/595528166/65e0704f61


50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
BOSTON • MASSACHUSETTS
Deanna Ducher
PAST • PRESENT • FUTURE

Letter from the Executive Director

Living Richly in the Real World

Roger Larson, CAE

"The greatest poverty is not to live in a physical world."
– Wallace Stevens, 1944

It may well be true that physicans' lives and livelihoods are defined too little by poets and too much by insurance executives. Which makes the lines above fit perfectly into this "Goldilocks Year" of too little, too much, just right. The line is taken from the final stanza of a poem by Wallace Stevens, *Esthétique du Mal*, first published in the *Kenyon Review* in the Fall of 1944. One of the greatest of modern American poets, Stevens put bread on his family's table – a lot of bread – working by day as a vice-president for the Hartford Company in the mid-Connecticut "Insurance Capital of the World."

The poem is a study of counter-balancing abstracted evil with reality, the "real" beauties of the natural world. Stevens began writing it in 1943 but saw it published midway through the bipolar hopeful and tragic year that followed, a year when many Americans, horrified by the high cost paid in June on the beaches of Normandy, but hopeful that the Allies successful invasion might signal the return home of soldiers by Christmas, found themselves briefly frozen in horror and dismay again in December, their premature relief and euphoria arrested by the German counteroffensive in the Ardennes, more commonly known as the Battle of the Bulge, one of the bloodiest and costliest battles in American history.

If that rapid roller coaster ride from dread to hope to dread again in a brief period of time sounds familiar, maybe even a bit arch, it is meant to. For all that they deserve the moniker, "The Greatest Generation," Americans of that era were not all that markedly more focused and patient in matters public than succeeding generations. Franklin Roosevelt's greatness had less to do with pugnacious resolve than it did his peerless ability to guage the public's mood, to monitor their collective Goldilock tendency to impatiently move from too little or too much, too soft or too hard, too hot or cold, before finally arriving at "just right."

As a country, we are where we are in the Fall of 2021 because we still cannot settle among ourselves whether collective measures meant to combat and contain the pandemic are too little or too much. We moved with dizzying imprecision and distraction from polarized positions of amorphous anxieties and real fear to premature celebrations of crested curves and resumed rituals too eagerly embraced as feeling "just right." In that 18-month shuttle between being too isolated and too immersed, too fearfully masked and remote to too recklessly familiar and unmasked, we lost all sense of being grounded in physical reality. Having become too habitually disembodied in a virtual world, some of us lost all hunger and savor for the real world.

So here we are. Who knows how risky our resolve to meet in Boston really is? The yearning we have felt for years now to celebrate that once-in-a-lifetime milestone, our 50th Anniversary Meeting, and along with it our calling and identity – our Past, Present and Future – was made to seem all that more urgent and compelling having missed out last year on the once-in-a-generation chance to bring all the child neurologists in the world together in San Diego. Good as it was, the virtual meeting felt a bit, well, "too little." Much as we all want to regather in Boston, rising curves and ominous variants, coupled with variable attitudes toward vaccines, masks, and sensible socializing make some feel as though jumping back into a medical meeting in an urban environment is simply "too much." I have no idea – do you? – what "just right" might look like or actually be.

And so, we have tried, the CNS Board of Directors and National Office, to come up with a range of options. For some, a virtual meeting might be too little, for others, a live in-person meeting in Boston, too much. A

hybrid meeting is a plausible "just right," I guess: live-streaming content from the comfort of home or office that those comfortably (or uncomfortably) gathered in Boston are interacting with face-to-face. When, we all wonder, can we claw our way out of the soulless impoverishment of the screen-world we have inhabited for the past 18-months and regain contact with the soil, sunlight and soulfulness of the real, physical, relational world we relish and need?

That you, that any of us may yet be able to experience, embrace and celebrate this milestone 50th Annual Meeting together or apart, in Boston or on-screen, is greatly owing to the drive and discipline demonstrated daily by a remarkable, and remarkably small cohort of CNS National Office Staff members and a handful of familiar and reliable service contractors. Chief among them, of course, is CNS Associate Director, Sue Hussman. I first met Sue in 1994 when Mary Currey and I realized that putting on a joint meeting with the International Child Neurology Association in San Francisco would require a lot more professional savvy, experience and muscle than the two of us could muster. I remember being so impressed, dazzled even, by the sales pitch made by one of the executives and part-owners of the general service contractor in town who promised to raise the big tent for us and put on a big show. I looked forward to meeting him the following week to get down to the nuts and bolts of planning the CNS-ICNA conference. Instead, this prim, petite young woman walked through the door and politely introduced herself. I could almost feel the air go out of the big tent and my confidence sag like beer-and-peanut perfumed canvas all around me. What, I wondered, could she possibly do to help us?

I have been wrong many times over the years, but never more so than in that first meeting when I asked myself the wrong question. Rather than ask "what can she do?" I should have asked, "what can't she do?" I'm still trying to find out. As I have told countless people over the years, Sue Hussman is flat out the best service person I have ever met. She defines the word "service". Whatever needs doing, she will do it. Within reason. Which is the other, harder thing I have come to learn and mostly appreciate over the years of working closely with her. If what you are asking is unreasonable, is something that for some reason can't be done or shouldn't be tried, she will tell you, straight up. If planning three separate meetings – which is what, essentially, this year's hybrid meeting involves – can't or shouldn't be done, she would have told me. Instead, she has done everything in her power to make it happen, using every trick in the book she has learned over three decades in the business of managing meetings, along with a bundle of new tricks she picked up in the last 18 months adapting

I have often teased Sue about being a Pollyanna. She doesn't merely think the glass is half-full, she sometimes seems to think there is a birthday cake waiting behind every door.

to the new realities ushered in by COVID-19. We are all moving into unexplored territory in the next few weeks. Be glad we are following Sue's lead. Be grateful, as I am, and tell her thanks, as I fear I don't do clearly and often enough.

She has not done this alone, of course. Kathy Pavel has provided unflagging support for a dozen or so years, both for Sue and myself. There may be times when Kathy thinks the only thing I know how to say or write is "remind me," "tell me again, "or send it again." And there have been many times when someone less kind and genuine might have told me what I could do with the new website and member database I made her learn and adapt to while working from home in the middle of a pandemic. If anyone approximates Kathy's matchless good cheer and willing support, it is Emily McConnell. But I don't need to tell many of you that. Members of the Scientific Program Committee, and especially the chairs, Carl Stafstrom and Yasmin Khakoo, all know how organized, thorough and efficient Emily is. And how kind and patient: I don't think she and Kathy have formed a support group where they get together and tell stories about how many times they sent Roger the same d___ file (except neither of them would swear, ever). But they could. Our accountant, Bill Cranford, could join them. I'm not sure Bill believed me when I confessed upon first meeting him nine years ago that I had never balanced a checkbook. That the CNS is not just solvent, but financially thriving is due in no small part to his acting as though that might be true, and being

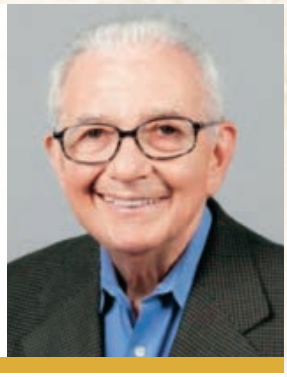
doubly conscientious about giving me advice that I clearly understood. He and Rachel have made your past several meetings more relaxed and pleasurable by processing your posters and taking that worry off your shoulders as Bill has taken the stress of monthly financial reports off of mine.

All in all, if you think navigating the swirls and eddies of my long sentences is hard and often pointless, try translating my wooly thought process into processed applications and dues notices, CME surveys and committee agendas, floorplans, exhibit booths and PR requests, food & beverage orders, presentation guidelines, hotel and convention center deliverables, signs, walk-in slides, support staffing and million dollar contracts. Sue, Kathy, Emily and Bill have all done it for years, largely without complaint. I couldn't have gotten through the past 10 (let alone 27) years without them.

Nor could they have maybe gotten through the past 10-15 years without the support of others, like Laura Laflin, who has calmly and uber-competently overseen registration since 2012; or Jeannie Ordoyne, Sue's "Sue" at Freeman who has quietly and comprehensively had her back – and mine – for 15 years; or Gary Ellegood, who worked our meeting and the AAN's for many years with PSAV and now is our primary AV consultant; or Richard Kearney, the videographer I first met in Boston in 2020 when we videotaped 15 conversations, then later recorded and edited 200+ presentation for last year's CNS-ICNA virtual meeting and came back again this year for more. And then there is the incomparable Suzanne Shaff, who has taken our annual meeting photos for the past eight years; try imagining the 50-day Countdown to Boston without benefit of her 5-7 photos featured daily. There would not even be a Countdown to Boston, or *CNS Connections*, or a new CNS website without the incomparable gifts of our longtime graphic designer, Kim Weeks.

Finally, there is Theresa Trapilo, a dear friend to me and to so many of you, whether you knew and worked with her at Boston Children's Hospital, or met her at one of the CNS Annual Meetings she helped staff going back to 1994. (I have known her, and prized her friendship, as long as I have known Sue and prized hers.) Theresa and my daughter, Mekea, organized and ran the podcast recordings together at CNS meetings since 2015; the two of them bonded, their sunny demeanor, kindness, intelligence, ready wit and sparkling laughter being so well-matched and so well-suited to the task of "herding cats" in a yearly four-day race against time. I always told Theresa that when she retired I would retire. Theresa, as many of you know, passed away in early September. To come to Boston and not see her again is virtually unimaginable. I am glad that I will at least be able to see – to physically greet – so many of you who she and I both knew and spoke warmly of, always with an admixture of appreciative levity and deepest regard. She was very "Boston" and very "real." And we are all richer for having known her.

Kenneth F. Swaiman Legacy Luncheon



Wednesday, September 29, 11:30 AM – 1:30 PM

Reservation/Ticket required

Presentation of 2021 Awards

See program, pp 49-50 for actual order of presentation

Roger & Mary Brumback Lifetime Achievement Awards

Presented to Robert Baumann, MD
Introduced by Kimberly Jones, MD

Presented to Sidney Gospe, Jr, MD, PhD
Introduced by Sonia Partap, MD

Arnold P. Gold Foundation Humanism in Medicine Award

Presented to Mary Zupanc, MD
Introduced by Ann Tilton, MD

CNS-PECN Training Director Award

Presented to Miya Asato, MD
Introduced by Bruce Shapiro, MD

Recognition of all Past Presidents

Recognition of all Past Officers

Recognition of all Past Awardees

Presentation of 2021 Junior Member Awards

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

Mary Currey: A Treasure of the Child Neurology Society

By John Bodensteiner MD (President 2007-2009)

As the Child Neurology Society approaches the end of its fifth decade, it would seem to be appropriate to reflect on the fundamental contributions to the Society made by Mary Currey. She was, for many years, the foundation of the organization, the primary contact person and the primary source of information for the members. In addition, she was the central organizer of the annual meetings and board of director meetings. She also took care of most of the business of the membership and the committees. I recently had an opportunity to chat with Mary about some of the many many experiences and memories she has of her four decades of work with and for the Child Neurology Society.

Mary was the youngest of 5 children in her family. She was raised high in the Canadian Rockies in the coal mining town of Crows Nest Pass, Alberta. When her older sister, Ada finished college in Edmonton and matriculated in graduate school at the University of Minnesota, Mary moved to Minneapolis with her and they faced the task of settling in a new university, city and country together. Parenthetically, Ada would also become an asset of the CNS as she functioned as the official photographer for the annual meetings from 2003 thru 2011. Mary had two job opportunities when she arrived in Minnesota, one with 3M and one with the University. The University of Minnesota allowed their employees to take one class a semester tuition free and that was the deciding factor in her choice. She was assigned to do secretarial and clerical work for the Chairman of Child Neurology, who was Mike Blaw at the time. When Dr. Blaw moved on to take a position in Texas, Dr. Swaiman became the Chief of the program. This was the beginning of a long and very fruitful relationship, particularly from the standpoint of the founding, growth and flowering of the Child Neurology Society.

As is the case in many "origin" stories, there are individuals whose names are linked to the founding of the society. Dr. Ken Swaiman initiated the plans to develop a society consisting of individuals sharing an interest in the development of child neurology as a clinical and scientific discipline. The first planning meeting of the new group was held in the winter of 1971, in La Crosse, Wisconsin, and was attended by Dr. Swaiman and the 7 other child neurologists who became the founding members of the Child Neurology Society. At this time, Ms. Currey was Dr. Swaiman's secretary. As anyone who has worked in an academic office knows, much of the work and most of the detail planning is carried out by the secretarial/administrative assistant staff. Such was the case at the beginning of the nascent organization, which would become the Child Neurology Society.

Mary Currey and Dr. Carl Crosley

Ms. Currey was responsible for arrangements for the annual meeting and the board of directors meeting of the CNS from its inception and for the next 40 years, until her retirement in 2012. In the early years, the hotel choice and arrangements, the printing and distribution of the schedule and abstract booklets and name tags for the attendees were her responsibility. The local child neurologist served as the host for the first few meetings and arranged for the banquet and any meals that were not to be in the hotel itself. By the time the fifth meeting in Monterey was held, Ms. Currey's presence was required on site as the increasing attendance resulted in increasing responsibilities making remote planning more or less impossible. It was at this CNS meeting in Monterey that Dr. Richard Allen finished his term as President and Dr. Bruce Berg was elected to the Presidency for the next year. It was also at this meeting that the *Annals of Neurology* was chosen as the official journal of the Child Neurology Society and remains so to this day.

The planning of the annual meeting continued in that general framework for the next several years. As the society grew and attendance at the meeting increased, the business of the Child Neurology Society began to tax the space and manpower available in the academic offices of Dr. Swaiman and the Child Neurology Division of the University of Minnesota. Things reached a critical point during the tenure of Dr. Marvin Fishman as President of the Society (1987-1989). The business of and the work involved in running the CNS had steadily increased and despite the recent hiring of Roger Larson, the volume of work continued to expand. The Board of Directors of the Society, meeting in Chicago that

spring, voted to move the offices of the organization to a separate facility with its own staff. Ms. Currey became a full-time employee of the Child Neurology Society at this juncture. The office was first established in a location known as the "Northwoods" office where it stayed for about 4 years. The office was then moved to its current location on County Road E in St. Paul, during the tenure of Dr. Peter Berman as President (1991-1993).

Among the more memorable meetings that Ms. Currey describes is the first annual meeting in Phoenix in 1984. During the annual meeting the slate of officers of the society had been elected by an in-person, show of hands vote. This had been the case in the first several yearly meetings. Because of a controversy regarding the vote at the Phoenix meeting, however, the Society switched to mail ballots. Interestingly enough, the Child Neurology Society has been using mail ballots or on-line balloting now for 36 years and there has yet to be an allegation of voter fraud.

The joint meeting of the CNS and ICNA (International Child Neurology Association) in 1994 was also a memorable meeting. Because of the anticipated number of attendees and the expected complications during registration, name badges, schedules and abstract books, Ms. Currey requested that Dr. Volpe (President at that time), along with Drs. Di Vivo, Fishman, Stumpf and Ashwal bring their secretaries/administrative assistants to the meeting to be held in San Francisco. The operational team thus assembled worked so well that the plan was repeated for several annual meetings going forward. One of the memorable events at the combined ICNA-CNS meeting was an excursion via boat out of the harbor under the Golden Gate bridge, which normally would be a spectacular outing. However, the cold, wind and rain combined to make the expedition memorably miserable. The San Francisco meeting was also remarkable for the unusual apportionment of the projected cost and profits of the meeting with the cost to be borne by the CNS and the profits to be split evenly.

Although, over the years, the annual meetings have been produced with remarkable aplomb, there are always some unforeseen events which have occurred and become memorable exceptions to the generally smooth meeting agenda. One such memory which Ms. Currey recounts occurred at the Charlottesville meeting in 1977. The meeting materials, name badges, abstract books and agenda were shipped from the office in Minneapolis to the Child Neurology Offices in Charlottesville ahead of time. The shipment had been received and placed out of the way under a desk and then forgotten. At the time of the meeting, the materials could not be found nor could the individual who had accepted the delivery. Fortunately, with an "all hands-on deck" approach, copies were made of the program and name badges were produced and the meeting was carried off to the satisfaction of the participants. No mention of the slight downgrade in appearance of the materials

Dr. Stephen Ashwal and Mary Currey

nor the considerable upgrade in Ms. Currey's anxiety level, was ever made.

Other events which could have been disasters but in retrospect demonstrate the flexibility of the CNS and its members include the mistaken addition of ham in the sandwiches served at lunch at the second meeting in Phoenix-South Mountain in 1997. This oversight resulted in a demonstration of frustration from a hungry crowd of attendees and ended in a somewhat contained "food fight" wherein a few of the subs became airborne. Fortunately, the hotel accepted the fact that the cleanup was in part their responsibility and did not extract extra fees from the Society. Then there was the Nashville meeting in 1999, where a "Tractor Pull" was taking place at the same time as the plenary session of the annual meeting. The noise from the tractors completely drowned out the conference until accommodations for both events could be made.

Ms. Currey closed the chat by stating that she felt honored and privileged to have served with so many of the leading child neurologists in the specialty as well as in the Child Neurology Society. During her time with the CNS, Mary worked with 25 different presidents and countless committee and board members. She stated, "I never worked with anybody that I did not like, though there were occasional disagreements." Mary also expressed the impression that the group of people who become child neurologists are pleasant, kind and generous people. "They are just nice people in general." The last, is a sentiment that I have heard from many quarters over many years and I firmly believe to be true.

On behalf of myself and the many members of the Child Neurology Society who had the great pleasure and privilege of working with Ms. Mary Currey, we want to say thank you for your many years of kind, thoughtful, gentle and effective leadership. The CNS would not be what it is without your stewardship over many years.

2021 Roger and Mary Brumback Lifetime Achievement Award

Robert J. Baumann, MD

By Larry B. Goldstein, MD, FAAN, FANA, FAHA

Bob Baumann earned his undergraduate degree from Tufts University and his MD from Western Reserve University. He then completed internship and residency in Pediatrics followed by residency in Child Neurology at the University of Chicago. His training was interrupted by service in the US Air Force where he was assigned as a Child Neurologist at the Wilford Hall US Air Force Medical Center, in San Antonio, Texas. He then returned to the University of Chicago as a fellow in Child Neurology.

Dr. Baumann first joined the faculty at the University of Kentucky in 1972, having been recruited by the Department of Neurology's first chairman, Dr. David B. Clark, himself a Child Neurologist (and recipient in 1974 of the Hower Award); he has remained at UK his entire career. Recognizing the true need in the state, Dr. Baumann immediately became the Director of the Regional Neurology Clinics under the auspices of the Kentucky Commission for Children with Special Healthcare Needs (which became the Kentucky Office for Children with Special Healthcare Needs). The program flourished under his guidance. UK Child Neurologists now provide care for children on a rotating basis in six regional clinics located in underserved areas of central and eastern Kentucky. These clinics also serve as a unique additional venue for training our Child Neurology residents and medical students.

Consistent with his dedication to service, Dr. Baumann had several important national leadership roles that have and continue to shape the practice of Neurology in general, but with a focus on Child Neurology. For example, was a member of the American Academy of Neurology's Practice Improvement Subcommittee (1998-2009, Chair 2005-2009), Quality Standards Subcommittee (2002-2009), Practice Committee (2005-2009), Child Neurology Section Councilor (2013-2015) and a member of the AAN Board of Directors (2009-2013). He has been a member of the Board of Directors of the United Council for Neurological Subspecialties since 2011, a member of its Audit Committee since 2012, the Secretary Treasurer since 2015, and chaired its Goals and Objectives Committee in 2016. Contributing to the work of the Child Neurology Society, he chaired the Neuroepidemiology Committee (1978-1980), was a member of Child Neurology Foundation Development Committee (2004-2015) and the Legislative Affairs Committee (2009-2015). All of these contributions were in addition to his important roles on several other task forces and work groups.

Dr. Baumann was called on as a consultant and advisor for national and international panels and groups. He was a member of the NIH-NINCDS Review Committee A (1980-1984), NIH Technical Merit Review Panels (1977, 1981) the Behavioral Neuroscience Study Section (1985), and a panel member for an NIH Study Site Visit Team (1986) and the NIH Epidemiology and Disease Control Study Section (1988-1990, 1993). He was a member of the Health Committee for the Kentucky-Ecuador Partners of the Americas Health Committee (1987-2014, Chair 1989-1991), an examiner for the American Board of Psychiatry and Neurology (1976-2006), an Advisory Board Member for the Kentucky Epilepsy Foundation (1976-1978), and a consultant for the American Academy of Pediatrics' Committee on Practice Parameters (1992-2016).

Kenneth F. Swaiman Legacy Luncheon

Despite his heavy clinical and administrative responsibilities, Dr. Baumann found time for scholarly work and service. He authored or co-authored 76 peer-review reports, many of which were published in top-tier journals including *American Journal of Epidemiology*, *Annals of Neurology*, *Neurology*, *JAMA*, *Journal of Child Neurology*, *Pediatric Neurology*, *Neuroepidemiology*, and *Pediatrics*. He was a member of the editorial boards of the *Journal of Child Neurology* (1987-1993), *Pediatric Neurology* (1986-1993) and an ad hoc reviewer for several other prominent journals including *New England Journal of Medicine, Epilepsia,* and *Lancet Neurology*. Over his career, he also served as a co-investigator or sub-investigator for several clinical trials aimed at bringing new treatments to children with neurological conditions.

As Chief of the UK Division of Child Neurology since 1979, Dr. Baumann not only led our related clinical programs but has also been a role model and effective advocate for resident education. As Child Neurology is a division of our Department of Neurology, he always brings his expertise and experience to all of our educational conferences. He directed our Child Neurology residency program for several decades with his trainees practicing neurology throughout the country and in other countries, the majority in academic settings.

Dr. Baumann has dedicated his adult life to Child Neurology. He has had long-lasting and significant contributions to providing care to underserved populations, academic service, scholarly work, and medical education. He has trained generations of Child Neurologists, contributed to the growth of the profession, and has been singularly dedicated to providing high-level neurological care to children with limited access to healthcare services residing in rural areas of our Commonwealth. He continues to work tirelessly in support of our programs, trainees, and the patients we serve through his efforts in our institution, region, nationally, and internationally.

Larry B. Goldstein, MD, FAAN, FANA, FAHA
Ruth L. Works Professor and Chairman, Department of Neurology
Co-Director, Kentucky Neuroscience Institute
Co-Director, UK Neuroscience Research Priority Area
Interim Director, UK-Norton Stroke Care Network

2021 Roger and Mary Brumback Memorial Lifetime Achievement Award

Sidney M. Gospe, Jr. MD, PhD

by James F. Bale, Jr. MD

Sidney (Sid) M. Gospe, Jr, MD, PhD, was born in San Francisco, California and spent his childhood and early school days in the City by the Bay. An avid fan of the San Francisco Giants and the 49ers, Sid's fondest childhood memories come from attending baseball and football games at Candlestick Park and Kezar Stadium. At the latter, he could obtain an endzone seat for just 50¢ and a milk carton ticket! At Candlestick, he saw a game of the 1962 World Series which included future Hall of Famers Willie Mays, Willie McCovey, Juan Marichal, and Orlando Cepeda for the Giants; and Mickey Mantle, Yogi Berra and Whitey Ford for the New York Yankees. Sadly for Sid, the Yankees won the series!

Surrounded by medical professionals – his father and two brothers were physicians, and his mother had attended nursing school for a time – Sid's future as a physician-scientist was cast at a very early age. He worked summers during high school and college processing specimens for a pathologist, an activity that further cemented his desire to pursue a medical career. He maintained this interest during his college years at Stanford University and there, Sid developed an affection for research and the neurosciences. After receiving a BS with distinction and MS in the biological sciences from Stanford, he entered the Medical Scientist Training Program at Duke University where he would receive a PhD in Physiology and Pharmacology in 1980 and an MD in 1981; his dissertation: "Pharmacological Studies of a Novel Dopamine Receptor Mediating Burst-Firing Inhibition of Neurosecretory Cell R-15 in *Aplysia californica*." Sid's medical school experiences in neuroanatomy further stimulated his interest in the neurosciences, and his final clinical rotation in pediatrics convinced him that working with children brought the greatest joy. Fortunately for us all, his path led to child neurology!

Upon graduation from medical school Sid matched in pediatrics at the Baylor College of Medicine and subsequently joined an exceedingly-talented group of child neurology trainees (which included Drs. Tallie Baram, Bill Dobyns, and Huda Zoghbi) in the Baylor Pediatric Neurology Program. Among his many influential teachers and mentors were Drs. Marv Fishman, Alan Percy and Dan Glaze. This remarkable and stimulating educational, clinical and research environment served Sid well. After completing child neurology training, Sid would spend a year in Albany, New York, before returning to California to accept a position at the University of California, Davis School of Medicine in 1987. He received lifetime certifications from the American Board of Pediatrics (ABP) and the American Board of Psychiatry and Neurology (ABPN) with Special Qualification in Child Neurology in 1987 and 1988, respectively. His participation with the Boards and commitment to education and self-improvement would lead later to voluntary recertifications in both Boards.

At UC Davis, Sid continued his trajectory toward prominence in child neurology, rising rapidly through the academic ranks to tenure in 1991 and Professor of Neurology and Pediatrics in 1997. During this time he participated actively as an investigator and mentor in the UC Davis graduate program in Pharmacology and Toxicology. In 1991 he became Director of the Child Neurology section at Davis, a position which enabled him to have a profound impact on the careers of young trainees. Receipt of numerous teaching awards from the UC Davis Department of Pediatrics and election to Alpha Omega Alpha as a faculty member underscored Sid's talents as an educator and mentor.

Sid continued his research interests in neurotoxicology during his days at UC Davis and began to focus his investigations on pyridoxine-dependent epilepsy, a condition for which he would gain an international reputation. He competed successfully for numerous intramural and extramural research awards, and his list of publications grew substantially. His notable contributions to neuroscience, of which there are many, include "Reduced GABA synthesis in pyridoxine-dependent seizures," *Lancet* 1994; "Longitudinal MRI findings in pyridoxine-dependent seizures,"

Kenneth F. Swaiman Legacy Luncheon

Neurology 1998; "Glial localization of antiquitin: Implications for pyridoxine-dependent epilepsy," *Annals of Neurology* 2014; and "Intragenic deletions of ALDH7A1 in pyridoxine-dependent epilepsy caused by Alu-Alu recombination," *Neurology* 2015. In total, Sid has published more than 100 scientific papers and has written numerous book chapters on pyridoxine-dependent epilepsy and other metabolic or toxic disorders of the developing brain.

In 2000 Sid moved further up the West Coast and accepted a position at the University of Washington School of Medicine in Seattle, as Professor of Neurology and Pediatrics, Head of the Division of Pediatric Neurology, and recipient of the Herman and Faye Sarkowsky Endowed Chair in Child Neurology. This transition enabled Sid's career and prominence in child neurology to blossom, and with this move came the opportunity to guide both trainees and junior faculty. Under his leadership, the Division of Pediatric Neurology at the University of Washington flourished, growing from just five to more than 20 faculty members, and the pediatric neurology training program grew from one position per year to three. During his tenure at the University of Washington, Sid would help train 34 residents in child neurology, many of whom have since gained prominence in their own right as educators, clinicians and investigators. His remarkable accomplishments as program director led to presentatikon of the CNS-PCN Blue Bird Circle Training Director Award at the Child Neurology Society Annual Meeting in Kansas Citty in 2017. Building the University of Washington Division of Pediatric Neurology and watching the faculty he recruited achieve success are among his most satisfying career moments.

Although extremely busy with the day-to-day, sometimes mundane aspects of running a highly-successful pediatric neurology division, Sid continued to contribute broadly to the disciplines of pediatrics and pediatric neurology. He served for many years on the editorial board of *Pediatric Neurology*, becoming Senior Associate Editor in 2013, and since 2015, he has served as Associate Editor of *Pediatric Research*. He gives of his time selflessly, reviewing manuscripts for numerous journals, including *Annals of Neurology*, *Brain*, *Journal of Child Neurology*, *Journal of Pediatrics*, *Neurology*, *Pediatric Neurology and Pediatrics*. His capacity and commitment to quality in education enabled him to participate in numerous committees of the ABP, including the often-maligned Maintenance of Certification Committee.

Sid also served for many years as a child neurology examiner for the ABPN. Most recently, he serves as an Associate Editor of *Question of the Week*, a maintenance of certification activity of the ABP. Sid's dedication to these extramural endeavors ensures educational and scientific rigor for pediatricians and child neurologists alike.

A true, triple-threat academician, Sid has had a marvelous career as a clinician-educator. He received teaching awards at both of his career stops, UC Davis and the University of Washington, and his contributions as an educator led to the prestigious Parker J. Palmer Courage to Teach Award from the Accreditation Council for Graduate Medical Education which Sid received in 2014. His clinical expertise garnered him recognition as one of America's Best Doctors for many years. Some of his most memorable experiences as a clinician came from his participation in the University of Washington's WWAMI (Washington-Wyoming-Alaska-Montana-Idaho) program. He made more than 100 trips to clinics in Alaska during his 17 years in Seattle. In Sid's own words, he felt that "working with the native Alaska population (the Yupik in the Yukon-Kuskokwim Delta and the Tlingit in Southeast Alaska) was an absolute privilege". And exciting, too. He ate caribou stew and Eskimo salad dressed with seal oil and went ice fishing with the locals while stranded, albeit temporarily, in Bethel, Alaska.

Sid remained dedicated not only to his faculty colleagues and trainees, but to his family, as well. Married to his wife, Mary, for more than 40 years, Sid counts among his greatest accomplishments their two successful children (one, a math assessment specialist, and the other, a clinician-scientist like his dad) and their three grandchildren. In fact, his move to Durham, North Carolina, his current location, arose from a strong desire to be close to family. In retirement, Sid enjoys theater, music and pleasure reading. As an Adjunct Professor of Pediatrics, he helps mentor child neurology residents in the Duke program. He also fills his time with scholarly pursuits, continuing to work with Seattle colleagues on imaging in pyridoxine-dependent epilepsy and collaborating with the International Pyridoxine Dependent Epilepsy Consortium based in Denver, Vancouver, London and the Netherlands.

2021 Arnold P. Gold Foundation Humanism in Medicine Award

Mary L. Zupanc, MD

By Bruce H. Cohen, MD

Mary L. Zupanc, MD, was destined to be an advocate and humanist. It is a true honor to write her brief biography for the CNS members. These paragraphs only begin to describe Dr. Zupanc's accomplishments as an advocate for the community. The Arnold P. Gold Foundation Humanism in Medicine Award recognizes the CNS member who has demonstrated "extraordinary and ongoing humanism in their medical career." Mary was selected by the Child Neurology Society Awards Committee to be the 2021 recipient. This award is supported by the Gold Foundation and reflects the life and work of Arnold P. Gold, MD (1925-2018), an original member of the CNS, the 2005 recipient of the CNS Lifetime Achievement Award and a respected child neurologist who embodied the tenets of humanism. Many of us were fortunate to have either worked alongside Dr. Gold, or were lucky enough to have been one of his trainees.

Mary's story starts long before she was born. Her mother was a registered nurse and joined the US Army Nurse Corps during World War II, serving in a hospital unit in France, as American paratroopers entered Germany. Her father turned 18 years old on Pearl Harbor Day 1941, enlisted immediately in the Navy, and started his quest to be a physician. Her parents met after WWII at the University of Wisconsin in Madison. Mary was born in Milwaukee, WI while her father was away on military duty. As a baby, Mary moved with her parents to Japan, where her father was stationed during the Korean War. Following the war, her family relocated to Duluth, Minnesota and finally Monroe, Wisconsin, a small town of 8000, about 40 miles southwest of Madison, which she considers home.

At the time of Mary's graduation from high school, only about 40% of her classmates went on to college. During her senior year in high school, she was told by her guidance counsellor that she had four life choices: to become a teacher, secretary, mother, or nurse. She was actively discouraged from a career as a physician, and dutifully began her nursing studies at the University of Wisconsin. Mary remembers her father telling her that if she entered medicine, she "would be taking the place of a man." Mary was an outstanding math and science student and did just fine in her studies, noting that as a nursing student she participated in the same classes in pharmacology and physiology that the medical students attended. During her nursing studies, Mary met Ray (Raymond W.M.) Chun, MD (1926-2014, whose seminal role in the Child Neurology Society includes being a member of the "LaCrosse 8" responsible for founding the CNS and planning its first meeting Ann Arbor, Councillor for the Midwest on the Executive Committee (1973-75), Secretary-Treasurer (1975-1978) and President (1982-83), for which he was honored in 2006 with presentation of the Lifetime Achievement Award. Dr. Chun made a deep impression on Mary with respect to how to treat children and their families, and would later bring Mary into the specialty. Following completion of all her credits for a nursing degree, Mary decided to take another path with additional coursework, having fallen in love with genetics, thanks in part to the teaching and mentoring from two genetic greats: John Opitz and W.K. Smith. Mary never received a nursing degree but did graduate from the University of Wisconsin with 144 credit hours and a degree in Zoology.

At the advice of her college professor, Mary arranged to spend a year in a genetics lab at University of California Los Angeles. She spent a year in a wonderful lab, as well as drove a truck for the UCLA Co-Op, but did not think laboratory research was her calling. She decided to apply to medical school, again against the will of her father. Mary recalls her father telling her that these actions were disrespectful to her mother (a nurse). Regardless, Mary was accepted and attended UCLA Medical School, graduating first in her class, the first woman to have achieved that distinction. It was probably ten years later that Mary and her father began to reconcile after Mary diagnosed her father's congestive heart failure (missed by his physicians) and got him

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into the care of an excellent – female! – cardiologist. Mary's father soon afterwards thanked Mary for "saving my life" and their relationship blossomed.

Mary entered pediatric residency at Seattle Orthopedic Hospital, now known as Seattle Children's Hospital. She had intended to spend all three of her pediatric training years in Seattle, but found herself in the middle of a serious controversy during her second year. As Co-President of the Housestaff Association, she and other residents were faced with long duty hours. This, of course, occurred a decade before the Bell Commission's findings resulted in 80-hour work weeks for residents. Mary's colleagues in surgical subspecialties were routinely expected to work 72 hour shifts without scheduled breaks. In an attempt to draw attention to these unsafe conditions, the Housestaff Association organized a respectful and safe resident work slowdown. Her program director threatened Mary with making sure she would never receive her board certification in Pediatrics, but that never came to be. Mary decided to spend her third year at Harbor-UCLA Medical Center in Torrance, California under the mentorship of Dr. Joseph St-Geme. At some point during all this turmoil, Mary re-engaged with Ray Chun, who convinced Mary to enter Child Neurology. She loved her time with Dr. Chun and found him to be a kind man who would often engage, by midwestern standards, in a unique method of examining children – by singing or dancing with them. Mary describes Ray as being despondent at how little he could offer his patients with epilepsy and asked that Mary take on this branch of Child Neurology as her career choice. Subsequently, Mary spent six months expanding her knowledge of epilepsy, dividing her time between Stanford, where she studied neonatal EEG with Dr. Barry Tharp, and UCLA, where she studied magnetoencephalography and the surgical treatment of epilepsy with Dr. Wm. Sutherling and Dr. Jerome Engel, Jr. She then returned to the University of Wisconsin-Madison for several years before being wooed by Dr. Gregory Cascino to join the faculty at The Mayo Clinic. Mary loved her time at Mayo but, in part because of family needs, moved to New York City to Columbia-Presbyterian Medical Center, where she met Arnold Gold, the founder of this award. During Mary's time at Columbia, she fostered a close friendship with Dr. Gold. Like many of us who were fortunate to have spent time working with him, Mary saw and appreciated how he advocated for the needs of children. Some of Mary's fondest memories were her deep conversations with her friend and mentor, Arnold Gold.

Dr. Zupanc then went back to her roots – Wisconsin, to the Children's Hospital of Wisconsin in Milwaukee, where she led the Child Neurology Division for a decade before moving to her current job 10 years ago at University of California – Irvine/ Children's Hospital of Orange County. She spent eight years growing and leading the division, initiating the epilepsy program and further developing the training programs in both epilepsy and child neurology before being appointed as the co-Medical Director of the CHOC-Children's Neuroscience Institute.

Dr. Zupanc has been an advocate for children both at the bedside and working as part of larger organizations. Not only has Dr. Zupanc been a superb clinician, she has moved the field of epilepsy therapy forward, built two large and successful divisions of child neurology, and been a successful educator. At the bedside, she has been a strong advocate for children and their families.

Mary has given back to her profession with her time and expertise, serving her colleagues in the CNS as Councillor for the West (2016-2018), as well as her patients and families with a six-year commitment as a board member for the Child Neurology Foundation during a critical period of the CNF's growth. Mary has gone beyond the traditional "safe" service to the community but has also taken some professional risks in her advocacy path. She was a member of the board of directors for Physicians for Social Responsibility, the American branch of the International Physicians for the Prevention of Nuclear War (IPPNW) during the period when this organization was awarded the Nobel Peace Prize (1985). One of her proudest moments was traveling to the USSR and meeting with Soviet physicians holding the same passion for peace and sharing with them the elation felt, not long afterward, when USSR President Gorbachev instituted the unilateral nuclear test ban treaty.

Finally, Dr. Zupanc has done mission work in India, Vietnam and Armenia, where she has taught and delivered medical care in remote areas. She has also been involved in family and community outreach to the underserved in the United States, including Native Tribes, Hmong refugees, inner city Black and Latino communities.

This award has been given for a career-long effort of compassion and humanism in medicine. "One of the wonderful things about child neurology," Mary explains, "is that you often embark on a decades-long journey with families. My patients and families have taught me so much about life, humility, how to truly listen, and be open-minded. They transform you. . . in the same way that, hopefully, you change a child's life and a family's life by working together for a cure. That's what this profession is all about, and why it has always been more than a job for me. It's a calling."

2021 CNS-PECN Training Director Award

Miya Asato, MD

By Patricia Crumrine, MD

Miya Asato has been the glue that has bonded child neurology residency and neurodevelopmental residency programs at the University of Pittsburgh for many years. Her energies, administrative skills, and willingness to be creative have been some of the skills that have facilitated the growth of these residency training programs over the years.

Miya was born and grew up in Trenton, New Jersey. She and her sister were the daughters of parents who were born in Japan, and migrated to Hawaii during WWII. Education was important to both of her parents. Because of this drive, they migrated to the mainland and to Trenton. Her father was an organic chemist whose achievements were in the field of agricultural chemistry, and her mother was an educational professional. She graduated from high school, going on to Tufts University where she received a BS in occupational therapy. She worked as a therapist prior to applying to medical school; it was during this time that she became fascinated with brain plasticity, and decided to pursue a career in medicine.

Miya completed a Post Baccalaureate program at Goucher College prior to entering Jefferson Medical College, graduating *cum laude* in 1995. She completed a Pediatric Residency (1995-1998), and a Child Neurology Residency (1999 –2002) at the Children's Hospital of Pittsburgh under the direction of program directors Dr. Dena Hofkosh (Pediatrics) and Dr. Nina Schor (Child Neurology). From 2002-2005 she completed a Post-doctoral Clinical Research Fellowship at the Western Pennsylvania Psychiatric Institute and Clinic in Pittsburgh, supervised by David Brent, MD and Beatriz Luna, PhD. She joined the child neurology faculty in 2005 as an Assistant Professor of Pediatrics and Psychiatry. She became Associate Professor of Pediatrics and Associate Professor of Psychiatry in 2013, and Associate Professor in Clinical and Translational Science in 2014. She was appointed as Professor of Pediatrics at the University School of Medicine in 2018.

In 2007 she became the Program Director for the Neurodevelopmental Disabilities Residency and in 2009, Associate Director for the Child Neurology Residency Program, and Associate Director for the Neurocognitive Program at the Western Psychiatric Institute and Clinic of the University of Pittsburgh. She was boarded by the American Board of Pediatrics in 1998, American Board of Psychiatry and Neurology in Neurology – with Special Competence in Child Neurology in 2004, recertified in 2015; and by the American Board of Neurology and Psychiatry – Neurodevelopmental Disabilities in 2007 and recertified in 2015. In 2011 she was appointed as Co-Director of the LEND program at the University of Pittsburgh, and in 2017, as the Director of LEND.

Miya's many awards are testaments to her teaching and mentorship skills over the years and include the Jeffrey S. Farkas Memorial Pediatric Intern Teaching Award from Children's Hospital of Pittsburgh (1996), Pediatrics Primary Care Award from Children's Hospital of Pittsburgh (1998), Fellow of the Year Award from Children's Hospital of Pittsburgh (2002), John Merck Fund Summer Institute on the Biology of Developmental Disabilities (2004), NINDS Research Career Award (K23) (2005), NIDA Young Investigator Invited Poster Session and Travel Award (2005), Adelyn Stroup Pediatric Epilepsy Lectureship, Johns Hopkins University (2010), AAN Donald M. Palatucci Advocacy Leadership Forum Advocate (2014), Philip Troen, MD, Excellence in Medical Health Sciences Award, UPSOM (2014, and AAN Transforming Leader Program 2017. She has been named as a Best Doctor in *Pittsburgh Magazine*.

Miya has been an active educator both to professional learners, to other educators and to parents and patients. At University of Pittsburgh Medical School level she has been active in curriculum development and educational leadership at divisional, departmental and medical school levels, participating in clinical competency committees for child neurology and

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neurodevelopmental disabilities; graduate medical education committees at the University of Pittsburgh Medical Center (UPMC), Co-organizer and Moderator for the GME leadership conference, Judge for 2016 Medical Education Day of the University School of Medicine. As an educator she taught Advanced Physical Examination Skills Course, Clinical Neuroscience Clerkship, has been a PBL facilitator for MS1 students, provided seminars on Diversity to MS1 students, lectures on Area of Concentration "Cognition and The Developing Brain in Pediatric Epilepsy," "Transition to Internship," and "Focus on Disabilities" as Co-Director. Other Pittsburgh University teaching has been to Dental Students and in the School of Rehabilitation and Health Sciences, lectures in the Pittsburgh School of Education (applied Psychology). She participates in resident teaching in the Departments of Pediatrics, Psychiatry, Neurology and Child Neurology. At the lay level, she has been an active supporter of the Epilepsy Association of Western/Central Pennsylvania and the Epilepsy Foundation of America, serving on their professional boards and providing lectures for lay audiences.

She has served as a mentor for many medical students who have gone on to complete Child Neurology or Neurodevelopmental Disabilities training programs, and joined child neurology faculties throughout the country. Her mentorship extends to a wide group of learners that include not only medical students, but students in applied developmental biology, school of nutrition, and child neurology residents. Her skills as a mentor include the ability to help the learner to develop an organized plan of approach to a problem, and a realistic plan for accomplishing the plan within a reasonable time frame. She is always there for the mentor when needed and provides insight and support as needed.

Miya has been successful in achieving funding from HRSA for the LEND program at the University of Pittsburgh, from HRSA and NIMH. In addition to her many professional and educational duties, she finds time to participate on the editorial boards of *Epilepsy and Behavior*, and *Journal of Pediatric Epilepsy*; as an ad-hoc reviewer for a variety of medical and professional journals; and as a scientific reviewer for a number of organizations and foundations. She serves her community as a Medical Advisory Board Member for the Epilepsy Association of the Western/Central Pennsylvania region, and the University of Pittsburgh as a Local Advisory Board Member for the Office of Child Development, the UPMC Children's Hospital, as an Ethics Committee consultant. She also serves on several local volunteer boards in the Pittsburgh Community.

Miya's dedication to the education of trainees at all levels and types of training exemplifies the traits of a superb educator. Her parents' goal, which was to provide excellent training for themselves and their children, has been successfully achieved with the work that Miya has accomplished. As she finishes her time at the UPMC Children's Hospital of Pittsburgh and the University of Pittsburgh, she will continue her work at Kennedy Krieger Institute.

Miya has had the support of her husband, George, and their two children, Sam and Laura. In addition, the entire family provides support to the pediatric, child neurology, and neurodevelopmental disability residents and their families during their time in Pittsburgh. They and their children Sam and Laura are active in the community and their neighborhood. They are often seen as a family walking the streets and park trails in the East End of Pittsburgh and buying ice cream at a local store in the area. Congratulations Miya on a job well done and continuing!

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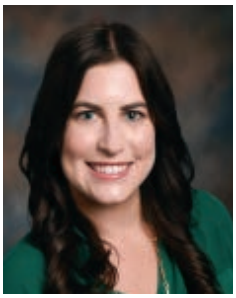
2021 Outstanding Junior Member Award

Darius Ebrahimi-Fakhari, MD, PhD
Boston Children's Hospital & Harvard Medical School
Boston, MA

Hannah Wellman, MD
University of Colorado
Aurora, CO



Laura Gilbert, DO, MBA
Washington University in St. Louis, St. Louis Children's Hospital
St. Louis, MO

Rhandi Christensen, MD, PhD
Pediatric Neurology, University of Toronto, The Hospital for Sick Children
Toronto, ON

2021 Post-Graduate Junior Member Award

Eric M. Chin, MD
Kennedy Krieger Institute, Johns Hopkins University School of Medicine
Baltimore, MD

Thiviya Selvanathan, MD FRCPC
The Hospital for Sick Children
Toronto, ON

M. Richard Koenigsberger Scholarship

Jennifer Keene, MD, MS, MBA
Washington University in St Louis
St Louis, MO

Bhuwan Garg High School Neuroscience Award

Meagan Ryan
Ossining, NY

The Efficacy and Safety of SPINRAZA® (nusinersen) Are Supported by 7+ Years of Clinical Trial Data and 4+ Years of Real-World Evidence[1-15]

SPINRAZA Clinical Trial Program*

ENDEAR	CHERISH	NURTURE	CS2/CS12
PIVOTAL TRIAL[1,4]	PIVOTAL TRIAL[1,6]	SUPPORTIVE TRIAL[2,3]	SUPPORTIVE TRIALS[7]
121 patients	126 patients	25 presymptomatic infants	28 patients
≤7 months at first dose	2 to 9 years at screening	≤6 weeks at first dose	2 to 16 years

Real-World Evidence

Hagenacker, Maggi, Duong
3 Independent, Observational Studies[11-13†]
300+ patients
16 to 72 years

*This is not a complete list of SPINRAZA clinical trials.
†Not Biogen-sponsored studies.

INDICATION

SPINRAZA® (nusinersen) is indicated for the treatment of spinal muscular atrophy (SMA) in pediatric and adult patients.

IMPORTANT SAFETY INFORMATION

Coagulation abnormalities and thrombocytopenia, including acute severe thrombocytopenia, have been observed after administration of some antisense oligonucleotides. Patients may be at increased risk of bleeding complications.

In the sham-controlled studies for patients with infantile-onset and later-onset SMA, 24 of 146 SPINRAZA-treated patients (16%) with high, normal, or unknown platelet count at baseline developed a platelet level below the lower limit of normal, compared to 10 of 72 sham-controlled patients (14%). Two SPINRAZA-treated patients developed platelet counts <50,000 cells per microliter, with the lowest level of 10,000 cells per microliter recorded on study day 28.

Renal toxicity, including potentially fatal glomerulonephritis, has been observed after administration of some antisense oligonucleotides. SPINRAZA is present in and excreted by the kidney. In the sham-controlled studies for patients with infantile-onset and later-onset SMA, 71 of 123 SPINRAZA-treated patients (58%) had elevated urine protein, compared to 22 of 65 sham-controlled patients (34%).

Laboratory testing and monitoring to assess safety should be conducted. Perform a platelet count, coagulation laboratory testing, and quantitative spot urine protein testing at baseline and prior to each dose of SPINRAZA and as clinically needed.

Severe hyponatremia was reported in an infant treated with SPINRAZA requiring salt supplementation for 14 months.

Cases of rash were reported in patients treated with SPINRAZA.

SPINRAZA may cause a reduction in growth as measured by height when administered to infants, as suggested by observations from the controlled study. It is unknown whether any effect of SPINRAZA on growth would be reversible with cessation of treatment.

The most common adverse reactions (≥20% of SPINRAZA-treated patients and ≥5% more frequently than in control patients) that occurred in the infantile-onset controlled study were lower respiratory infection and constipation. Serious adverse reactions of atelectasis were more frequent in SPINRAZA-treated patients (18%) than in control patients (10%). Because patients in this controlled study were infants, adverse reactions that are verbally reported could not be assessed. The most common adverse reactions that occurred in the later-onset controlled study were pyrexia, headache, vomiting, and back pain. Post-lumbar puncture syndrome has also been observed after the administration of SPINRAZA.

Please see the Brief Summary of Full Prescribing Information on the following pages.

References:
1. SPINRAZA Prescribing Information. Cambridge, MA: Biogen; 2020. **2.** Swoboda KJ, et al. Oral presentation at: Cure SMA Annual Conference. June 8-12, 2020; virtual. **3.** De Vivo DC, et al. *Neuromuscul Disord.* 2019;29(11):842-856. **4.** Finkel RS, et al. *N Engl J Med.* 2017;377(18):1723-1732. **5.** Finkel RS, et al. *Lancet.* 2016;388(10063):3017-3026. **6.** Mercuri E, et al. *N Engl J Med.* 2018;378(7):625-635. **7.** Darras BT, et al. *Neurology.* 2019;92(21):e2492-e2506. **8.** ClinicalTrials.gov. NCT01494701. Accessed May 6, 2021. **9.** ClinicalTrials.gov. NCT02462759. Accessed May 6, 2021. **10.** ClinicalTrials.gov. NCT024594124. Accessed May 6, 2021. **11.** Hagenacker T, et al. *Lancet Neurol.* 2020;19(4):317-325. **12.** Maggi L, et al. *J Neurol Neurosurg Psychiatry.* 2020;91(11):1166-1174. **13.** Duong T, et al. *Neurol Clin Pract.* 2021;11(3):e317-e327. **14.** Veerapandiyan A, et al. *Muscle Nerve.* 2020;61(2):222-226. **15.** Elsheikh B, et al. *Front Neurol.* 2021;12:650535. doi: 10.3389/fneur.2021.650535

Biogen

225 Binney Street, Cambridge, MA 02142

SPINRAZA® (nusinersen) injection 12 mg/5 mL

SPINRAZA® (nusinersen) injection, for intrathecal use
Brief Summary of Full Prescribing Information

1 INDICATIONS AND USAGE
SPINRAZA is indicated for the treatment of spinal muscular atrophy (SMA) in pediatric and adult patients.

2 DOSAGE AND ADMINISTRATION
2.1 Dosing Information
SPINRAZA is administered intrathecally by, or under the direction of, healthcare professionals experienced in performing lumbar punctures.

Recommended Dosage
The recommended dosage is 12 mg (5 mL) per administration.

Initiate SPINRAZA treatment with 4 loading doses. The first three loading doses should be administered at 14-day intervals. The 4th loading dose should be administered 30 days after the 3rd dose. A maintenance dose should be administered once every 4 months thereafter.

Missed Dose
If a loading dose is delayed or missed, administer SPINRAZA as soon as possible, with at least 14-days between doses and continue dosing as prescribed.

If a maintenance dose is delayed or missed, administer SPINRAZA as soon as possible and continue dosing every 4 months.

2.2 Important Preparation and Administration Instructions
SPINRAZA is for intrathecal use only.

Prepare and use SPINRAZA according to the following steps using aseptic technique. Each vial is intended for single dose only.

Preparation

- Store SPINRAZA in the carton in a refrigerator until time of use.
- Allow the SPINRAZA vial to warm to room temperature (25°C/77°F) prior to administration. Do not use external heat sources.
- Inspect the SPINRAZA vial for particulate matter and discoloration prior to administration. Do not administer SPINRAZA if visible particulates are observed or if the liquid in the vial is discolored. The use of external filters is not required.
- Withdraw 12 mg (5 mL) of SPINRAZA from the single-dose vial into a syringe and discard unused contents of the vial.
- Administer SPINRAZA within 4 hours of removal from vial.

Administration

- Consider sedation as indicated by the clinical condition of the patient.
- Consider ultrasound or other imaging techniques to guide intrathecal administration of SPINRAZA, particularly in younger patients.
- Prior to administration, remove 5 mL of cerebrospinal fluid.
- Administer SPINRAZA as an intrathecal bolus injection over 1 to 3 minutes using a spinal anesthesia needle *[see Dosage and Administration (2.1)]*.
  Do not administer SPINRAZA in areas of the skin where there are signs of infection or inflammation *[see Adverse Reactions (6.3)]*.

2.3 Laboratory Testing and Monitoring to Assess Safety
Conduct the following laboratory tests at baseline and prior to each dose of SPINRAZA and as clinically needed *[see Warnings and Precautions (5.1, 5.2)]*:

- Platelet count
- Prothrombin time; activated partial thromboplastin time
- Quantitative spot urine protein testing

3 DOSAGE FORMS AND STRENGTHS
Injection: 12 mg/5 mL (2.4 mg/mL) nusinersen as a clear and colorless solution in a single-dose vial.

4 CONTRAINDICATIONS
None.

5 WARNINGS AND PRECAUTIONS
5.1 Thrombocytopenia and Coagulation Abnormalities
Coagulation abnormalities and thrombocytopenia, including acute severe thrombocytopenia, have been observed after administration of some antisense oligonucleotides.

In the sham-controlled studies for patients with infantile-onset and later-onset SMA, 24 of 146 (16%) SPINRAZA-treated patients with high, normal, or unknown platelet count at baseline developed a platelet level below the lower limit of normal, compared to 10 of 72 (14%) sham-controlled patients.

In the sham-controlled study in patients with later-onset SMA (Study 2), two SPINRAZA-treated patients developed platelet counts less than 50,000 cells per microliter, with a lowest level of 10,000 cells per microliter recorded on study day 28.

Because of the risk of thrombocytopenia and coagulation abnormalities from SPINRAZA, patients may be at increased risk of bleeding complications.

Perform a platelet count and coagulation laboratory testing at baseline and prior to each administration of SPINRAZA and as clinically needed.

5.2 Renal Toxicity
Renal toxicity, including potentially fatal glomerulonephritis, has been observed after administration of some antisense oligonucleotides. SPINRAZA is present in and excreted by the kidney *[see Clinical Pharmacology (12.3)]*. In the sham-controlled studies for patients with infantile-onset and later-onset SMA, 71 of 123 (58%) of SPINRAZA-treated patients had elevated urine protein, compared to 22 of 65 (34%) sham-controlled patients. Conduct quantitative spot urine protein testing (preferably using a first morning urine specimen) at baseline and prior to each dose of SPINRAZA. For urinary protein concentration greater than 0.2 g/L, consider repeat testing and further evaluation.

6 ADVERSE REACTIONS
The following serious adverse reactions are described in detail in other sections of the labeling:

- Thrombocytopenia and Coagulation Abnormalities *[see Warnings and Precautions (5.1)]*
- Renal Toxicity *[see Warnings and Precautions (5.2)]*

6.1 Clinical Trials Experience
Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of SPINRAZA cannot be directly compared to rates in clinical trials of other drugs and may not reflect the rates observed in practice.

In clinical studies, 346 patients (47% male, 76% Caucasian) were treated with SPINRAZA, including 314 exposed for at least 6 months, 258 exposed for at least 1 year, and 138 exposed for at least 2 years. The safety of SPINRAZA was studied in presymptomatic infants with SMA; pediatric patients (approximately 3 days to 16 years of age at first dose) with symptomatic SMA; in a sham-controlled trial in infants with symptomatic SMA (Study 1; n=80 for SPINRAZA, n=41 for control); in a sham-controlled trial in children with symptomatic SMA (Study 2; n=84 for SPINRAZA, n=42 for control); an open-label study in presymptomatic infants (Study 3, n=25) and other studies in symptomatic infants (n=54) and later-onset patients (n=103). In Study 1, 58 patients were exposed for at least 6 months and 28 patients were exposed for at least 12 months. In Study 2, 84 patients were exposed for at least 6 months and 82 patients were exposed for at least 12 months.

Clinical Trial in Infantile-Onset SMA (Study 1)
In Study 1, baseline disease characteristics were largely similar in the SPINRAZA-treated patients and sham-control patients except that SPINRAZA-treated patients at baseline had a higher percentage compared to sham-control patients of paradoxical breathing (89% vs 66%), pneumonia or respiratory symptoms (35% vs 22%), swallowing or feeding difficulties (51% vs 29%) and requirement for respiratory support (26% vs 15%).

The most common adverse reactions that occurred in at least 20% of SPINRAZA-treated patients and occurred at least 5% more frequently than in control patients were lower respiratory infection and constipation. Serious adverse reactions of atelectasis were more frequent in SPINRAZA-treated patients (18%) than in control patients (10%). Because patients in Study 1 were infants, adverse reactions that are verbally reported could not be assessed in this study.

Table 1. Adverse Reactions that Occurred in at Least 5% of SPINRAZA Patients and Occurred at Least 5% More Frequently or At Least 2 Times as Frequently Than in Control Patients with Infantile-Onset SMA (Study 1)

Adverse Reactions	SPINRAZA 12 mg[1] N=80 %	Sham-Procedure Control N=41 %
Lower respiratory infection[2]	55	37
Constipation	35	22
Teething	18	7
Urinary tract infection	9	0
Upper respiratory tract congestion	8	2
Ear infection	6	2
Flatulence	5	2
Decreased weight	5	2

[1] Loading doses followed by 12 mg (5 mL) once every 4 months

[2] Includes adenovirus infection, bronchiolitis, bronchitis, bronchitis viral, corona virus infection, influenza, lower respiratory tract infection, lower respiratory tract infection viral, lung infection, parainfluenzae virus infection, pneumonia, pneumonia bacterial, pneumonia influenzal, pneumonia moraxella, pneumonia parainfluenzae viral, pneumonia pneumococcal, pneumonia pseudomonal, pneumonia respiratory syncytial viral, pneumonia viral, and respiratory syncytial virus bronchiolitis.

Clinical Trial in Infantile-Onset SMA (Study 1) (cont'd)
In an open-label clinical study in infants with symptomatic SMA, severe hyponatremia was reported in a patient treated with SPINRAZA requiring salt supplementation for 14 months.

Cases of rash were reported in patients treated with SPINRAZA. One patient, 8 months after starting SPINRAZA treatment, developed painless red macular lesions on the forearm, leg, and foot over an 8-week period. The lesions ulcerated and scabbed over within 4 weeks, and resolved over several months. A second patient developed red macular skin lesions on the cheek and hand ten months after the start of SPINRAZA treatment, which resolved over 3 months. Both cases continued to receive SPINRAZA and had spontaneous resolution of the rash.

SPINRAZA may cause a reduction in growth as measured by height when administered to infants, as suggested by observations from the controlled study. It is unknown whether any effect of SPINRAZA on growth would be reversible with cessation of treatment.

Clinical Trial in Later-Onset SMA (Study 2)
In Study 2, baseline disease characteristics were largely similar in the SPINRAZA-treated patients and sham-control patients except for the proportion of SPINRAZA-treated patients who had ever achieved the ability to stand without support (13% vs 29%) or walk with support (24% vs 33%).

The most common adverse reactions that occurred in at least 20% of SPINRAZA-treated patients and occurred at least 5% more frequently than in control patients were pyrexia, headache, vomiting, and back pain.

Table 2. Adverse Reactions that Occurred in at Least 5% of SPINRAZA Patients and Occurred at Least 5% More Frequently or At Least 2 Times as Frequently Than in Control Patients with Later-Onset SMA (Study 2)

Adverse Reactions	SPINRAZA 12 mg[1] N=84 %	Sham-Procedure Control N=42 %
Pyrexia	43	36
Headache	29	7
Vomiting	29	12
Back pain	25	0
Epistaxis	7	0
Fall	5	0
Respiratory tract congestion	5	2
Seasonal allergy	5	2

[1] Loading doses followed by 12 mg (5 mL) once every 6 months

Post-lumbar puncture syndrome has also been observed after administration of SPINRAZA.

6.2 Immunogenicity

As with all oligonucleotides, there is potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors, including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies to nusinersen in the studies described below with the incidence of antibodies in other studies or to other products may be misleading.

The immunogenic response to nusinersen was determined in 294 patients with post-baseline plasma samples evaluated for anti-drug antibodies (ADAs). Seventeen patients (6%) developed treatment-emergent ADAs, of which 5 were transient,12 were considered to be persistent. Persistent was defined as having one positive test followed by another one more than 100 days after the first positive test. In addition, "persistent" is also defined as having one or more positive samples and no sample more than 100 days after the first positive sample. Transient was defined as having one or more positive results and not confirmed to be persistent. There are insufficient data to evaluate an effect of ADAs on clinical response, adverse events, or the pharmacokinetic profile of nusinersen.

6.3 Postmarketing Experience

The following adverse reactions have been identified during post-approval use of SPINRAZA. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Serious infections associated with lumbar puncture, such as meningitis, have been observed. Hydrocephalus, aseptic meningitis, and hypersensitivity reactions (e.g. angioedema, urticaria, rash) have also been reported.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy
Risk Summary
There are no adequate data on the developmental risk associated with the use of SPINRAZA in pregnant women. When nusinersen was administered by subcutaneous injection to mice throughout pregnancy and lactation, developmental toxicity (long-term neurobehavioral impairment) was observed at all doses tested *(see Data)*. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 to 4% and 15 to 20%, respectively. The background risk of major birth defects and miscarriage for the indicated population is unknown.

Data
Animal Data
When nusinersen (0, 3, 10, or 25 mg/kg) was administered subcutaneously to male and female mice every other day prior to and during mating and continuing in females throughout organogenesis, no adverse effects on embryofetal development were observed. Subcutaneous administration of nusinersen (0, 6, 12.6, or 25 mg/kg) to pregnant rabbits every other day throughout organogenesis produced no evidence of embryofetal developmental toxicity.

When nusinersen (1.4, 5.8, or 17.2 mg/kg) was administered to pregnant female mice by subcutaneous injection every other day throughout organogenesis and continuing once every six days throughout the lactation period, adverse neurobehavioral effects (alterations in locomotor activity, learning and memory deficits) were observed when offspring were tested after weaning or as adults. A no-effect level for neurobehavioral impairment was not established.

8.2 Lactation
Risk Summary
There are no data on the presence of nusinersen in human milk, the effects on the breastfed infant, or the effects of the drug on milk production. Nusinersen was detected in the milk of lactating mice when administered by subcutaneous injection. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for SPINRAZA and any potential adverse effects on the breastfed infant from SPINRAZA or from the underlying maternal condition.

8.4 Pediatric Use
The safety and effectiveness of SPINRAZA in pediatric patients from newborn to 17 years have been established *[see Clinical Studies (14.1)]*.

Juvenile Animal Toxicity Data
In intrathecal toxicity studies in juvenile monkeys, administration of nusinersen (0, 0.3, 1, or 3 mg/dose for 14 weeks and 0, 0.3, 1, or 4 mg/dose for 53 weeks) resulted in brain histopathology (neuronal vacuolation and necrosis/cellular debris in the hippocampus) at the mid and high doses and acute, transient deficits in lower spinal reflexes at the high dose in each study. In addition, possible neurobehavioral deficits were observed on a learning and memory test at the high dose in the 53-week monkey study. The no-effect dose for neurohistopathology in monkeys (0.3 mg/dose) is approximately equivalent to the human dose when calculated on a yearly basis and corrected for the species difference in CSF volume.

8.5 Geriatric Use
Clinical studies of SPINRAZA did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects.

17 PATIENT COUNSELING INFORMATION
Thrombocytopenia and Coagulation Abnormalities
Inform patients and caregivers that SPINRAZA could increase the risk of bleeding. Inform patients and caregivers of the importance of obtaining blood laboratory testing at baseline and prior to each dose to monitor for signs of increased potential for bleeding. Instruct patients and caregivers to seek medical attention if unexpected bleeding occurs *[see Warnings and Precautions (5.1)]*.

Renal Toxicity
Inform patients and caregivers that SPINRAZA could cause renal toxicity. Inform patients and caregivers of the importance of obtaining urine testing at baseline and prior to each dose to monitor for signs of potential renal toxicity *[see Warnings and Precautions (5.2)]*.

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2021 Martha Bridge Denckla Award

Elizabeth Berry-Kravis, MD, PhD

By Walter E. Kaufmann, MD

The Martha Bridge Denckla Award was created and funded by the Kennedy Krieger Institute to honor their pioneer colleague by recognizing each year at the CNS Annual Meeting a physician-scientist of national and/or international status who is performing leading research in cognitive neuroscience or related investigation in human subjects with relevance to children with neurological disorders, especially neurodevelopmental disabilities, either genetic or acquired. The first recipient, Dr. Elizabeth Berry-Kravis, exemplifies the spirit of this award by a career dedicated to the care and development of new treatments for children with neurodevelopmental disorders.

Elizabeth Berry-Kravis, "Liz", was born in South Bend, Indiana. She moved 8 times in her first 7 years of life and landed back in South Bend when her father accepted a faculty position in Engineering at the University of Notre Dame. She decided in 7th grade she wanted to study the brain and the chemical basis of the production of thoughts and responses. A 100% Midwesterner, she attended Notre Dame (B.S. Chemistry), then the University of Chicago (M.D., Ph.D. in Biochemistry), which was followed by pediatrics and child neurology training and initial faculty career at the same institution. A move within the same city has led to a remarkably long tenure of almost 30 years at Rush Medical College, where she achieved the rank of Professor of Pediatrics, Neurological Sciences and Biochemistry in 2007.

Liz' comprehensive and incremental training explains her accomplishments in multiple areas, which have led to her becoming a role model for physician scientists in pediatric neurology. Although her research has covered many neurologic disorders, the common theme connecting these efforts is the treatment of neurodevelopmental disorders. Liz' graduate research work at the University of Chicago, under the guidance of Glyn Dawson, a leader in the biochemistry of Batten's disease, focused on the serotoninergic system and second messenger signaling with other projects on the biochemical aspects of lysosomal storage disorders. The '80s and early '90s were a period of significant development in these two areas and Chicago was the "capital of serotonin research", which included the report of initial links between this neurotransmitter and autism. This early work had a long-term impact since Liz has remained active in the lysosomal storage disease field, through collaborative work on the identification of novel biomarkers and treatments for Niemann-Pick disease type C, and in autism through her work in fragile X syndrome (FXS) and other related conditions.

Liz' greatest influence has been in the field of FXS. Reflecting her training, Liz' first major contribution to FXS combined bench and clinical skills: her now classic 1992 publication in *Annals of Neurology* with her clinical mentor and pioneer of American child neurology, Peter Huttenlocher, describing reduced cAMP production in platelets from patients with FXS. The work on cAMP led to numerous studies on cell signaling abnormalities in FXS, that have been fundamental for understanding FXS mouse models and for developing targeted pharmacological treatments including a promising trial in adults with FXS recently published in Nature Medicine.

Since the 1990s, Liz has contributed to almost every area of clinical research in FXS, efforts facilitated by her third career mentor and founder of the FXS field, Randi Hagerman. Her investigations with Randi and her husband, Paul Hagerman, on the clinical features of individuals with premutation of the FXS gene (FMR1) led to characterization of a new related disease, the Fragile X Tremor/Ataxia Syndrome (FXTAS). This neurodegenerative disorder occurring in older individuals with FMR1 premutation, identified by the Hagermans in the early '00s, represented an unexpected and challenging situation for clinical teams used to dealing with pediatric populations with neurodevelopmental disorders. Liz was among the first developmentalists addressing diagnostic and management issues in this population that resembles Parkinson's or Alzheimer's disease. Her translational and clinical approach remind us that we are first neurologists and second, pediatric specialists.

As of today, Liz has published well over 100 papers on a range of topics in FXS: molecular diagnosis, a critical issue since FXS is diagnosed genetically, not clinically; characterization of major clinical features, including her leading work on seizures as well as various approaches to management of the disorder. It is, however, her work on developing new treatments for FXS and its implications for other neurodevelopmental disorders that has become the signature of her career. Following the path pioneered by Randi Hagerman in the '80s, Liz has participated in or led the majority of clinical trials for FXS. She has also contributed to the development and validation of outcome measures and biomarkers, an area of conceptual and methodological complexity. The notion that FXS is a good model for drug development in neurodevelopmental disorders, including those with a less well understood etiology such as idiopathic autism, has evolved during the last decade through collaborative efforts involving scientists, clinicians, representatives from advocacy groups, the pharmaceutical industry, and federal agencies. Liz has been a key player in these endeavors illustrated by her 2018 publication in Nature Reviews Drug Discovery entitled "Drug development for neurodevelopmental disorders: lessons learned from fragile X syndrome," which summarized how far the field has come, including hopes, disappointments, and pathways for moving forward in FXS translational research. She also has made similar contributions to the premutation/FXTAS field. However, defining Liz exclusively as a FXS and FXTAS scholar would be unjust since she also has made important contributions in other areas that include Niemann-Pick C1 disease and other lysosomal disorders, congenital central hypoventilation syndrome, sudden infant death syndrome, and Phelan-McDermid syndrome.

Clinical practice and research are no longer a solo effort. Liz is well fit to this era of clinical consortia. She has shown herself to be an outstanding citizen. As with her patients, Liz is always available to her colleagues. If you send her an email, you should be certain she will respond later that day if not a few minutes after receiving it. Without hesitation, she has served on every committee or capacity that she has joined. Sometimes, she has been a "shadow" leader when the situation has recommended this as the best course of action. Whatever is the task or challenge, Liz applies her no nonsense, matter of fact Midwestern approach. If she is upset or deeply disagrees with someone, Liz will subject the "opponent" to a very lengthy email. The punishment is to read or respond to a missive with impeccable logic and overwhelming historical or bibliographic support. Continuous collaborative effort has been key to the success of the Fragile X Clinical and Research Consortium, a model for similar initiatives in neurodevelopmental disorders. However, collaboration without innovation is not sufficient for advancing any field. Incorporation of new models and methods of practice and research are essential. In this regard, Liz has taken advantage of a treatment study of young children with FXS supported by the NINDS NeuroNEXT network for introducing new designs and technologies. After more than a decade of single drug clinical trials, a combination of drug and nonpharmacological treatment (i.e., language intervention) offers the promise of more robust approaches to correcting early abnormalities in brain plasticity. Moreover, complementation of traditional clinic-based research with telemedicine delivered evaluations and interventions represents the logical evolution of a field facing the challenges of few, severely impaired, and widely dispersed patients. In this way, Liz is setting the stage for future clinical research in neurodevelopmental disorders.

Liz's remarkable scientific output should not overshadow the fact she is an outstanding clinician. I, along with many other colleagues have had some of the most illuminating case discussions with her. She speaks with the wisdom of an old clinical master, combining detailed observation with synthesis. For a fellow neurologist like myself, it is great to have a colleague with whom I can discuss as diverse aspects as abnormal gait patterns and differences between social avoidance and social aloofness. Liz has put clinical wisdom not only to the service of pure academic endeavors, but also to improving the quality of life of her patients. An illustration of her "down to earth" priorities are her 2019 papers on toilet training and pharmacological treatment of irritability and other disruptive behaviors in FXS, which tackle critical issues in the daily life of those affected by these disorders and their families.

Liz is both a superb clinician and scientist as well as a physician with a deep commitment to her patients and families. She has spent her entire career in Chicago, in contrast with the common high mobility of American academic physicians. She is always available to her patients, making their lives easier with Saturday clinics and by participating in virtually any family education meeting that she can attend. Clinical education and mentoring are another aspect in which Liz has contributed to the field of neurodevelopmental disorders. Since 1990, Liz has mentored over 100 trainees.

In addition to her success as a physician-scientist, Liz' life is family-oriented. She and her husband, Dean, have 3 children, all of whom have at one time or another been coaxed to be controls in or work on Liz's projects. They have now moved on to young adult life but live in the Chicago area, working in math and science fields: teaching high school science, radiology residency, and writing computer algorithms for high-speed trading, and all engaging in frequent family get togethers and tennis outings.

2021 Bernard Sachs Award

Jerry R. Mendell, MD

By E. Steve Roach, MD

This year's Bernard Sachs Lecturer is Jerry R. Mendell, MD, Professor of Pediatrics and Neurology at Nationwide Children's Hospital and The Ohio State University College of Medicine in Columbus, Ohio. He also holds the Juanita Curran and Dwight Peters Chair of Pediatric Research at the Abigail Wexner Research Institute. Dr. Mendell has published over 400 journal articles, most of them focusing on neuromuscular disease, along with books on myopathies, peripheral nerve disorders, and gene therapy. He has done seminal studies on the use of gene therapy for individuals with neuromuscular disease.

Dr. Mendell graduated from the University of Texas in Austin before entering the University of Texas Southwestern Medical School in Dallas. Following medical school graduation in 1966, Mendell became a neurology resident at Columbia University's New York Neurological Institute. After completion of his residency, he completed a three-year post-doctoral fellowship in the Medical Neurology Branch of the National Institutes of Health. In 1972 Mendell was recruited to The Ohio State University College of Medicine and Nationwide Children's Hospital (then Columbus Children's Hospital). He was named the Helen C. Kurtz Professor and Chair of the Department of Neurology at Ohio State in 1992, a position he held until moving to the Nationwide Children's Hospital Research institute in 2004.

Although gene therapies for neurological diseases have blossomed in recent years and hold enormous promise for individuals with numerous genetic diseases, many years of painstaking work by Dr. Mendell and others underpin these seemingly sudden recent successes. But starting early in his career, Mendell wanted to do more than quantify and categorize the neuromuscular diseases. He was determined to find treatments that would improve the lives of patients, and this steadfast resolve helped him overcome early disappointing results and solve once impossible barriers.

Dr. Mendell's work with muscular dystrophy began during his post-doctoral fellowship in the Medical Neurology Branch at NIH in 1969. His early work in Duchenne muscular dystrophy (DMD) described the contribution of a vascular pathway using experimental pathology outcomes,[1] work now confirmed by the molecular confirmation of nNOS binding sites on dystrophin. Additional efforts to support this hypothesis seemed encouraging, but clinical trials to promote blood flow were disappointing.[2;3] This was merely the first step of an extensive journey to find a treatment for neuromuscular disease, pursued over many decades. In the mid-1970's, Dr. Mendell joined an exceptionally talented group of muscle disease researchers to begin addressing some of the basic questions regarding clinical trials design, leading to the birth of the Clinical Investigation of Duchenne Dystrophy (CIDD) group in 1979. Over the next several years, this group introduced and recommended standardized methods for clinical trials, defined the natural history of DMD, determined sample size based on power calculations, and reinforced the importance of intra- and inter-rater reliability scores. In 1989, the CIDD group defined corticosteroids as the first treatment to be effective for DMD.[4] This study has been confirmed multiple times, and corticosteroid therapy is now the standard of care for DMD.[5]

Mendell's research continued as the entire field embraced molecular biology as a tool for research. An attempt to transfer the gene using skeletal muscle stem cells (myoblasts) was disappointing considering that the method had been highly touted.[6] The unraveling of the highly complex sequence of the dystrophin gene by the Kunkel Lab at Boston Children's Hospital facilitated efforts to treat muscle disease by direct gene transfer. In 1999 Dr. Mendell performed the first ever AAV gene transfer for skeletal muscle for limb girdle muscular dystrophy type 2D. There were early indicators of gene expression, but the trial was catastrophically interrupted by the highly publicized death of Jesse Gelsinger during a trial using adenovirus to transfer the OTC gene. Further attempts at gene transfer came only after Mendell's recruitment as the Director of the Translational Neuromuscular Gene Therapy Center at Nationwide Children's Hospital in 2004.

In March 2007, Dr. Mendell again initiated gene therapy for muscular dystrophy in the Center for Gene Therapy. His team's

study of limb-girdle muscular dystrophy type 2D confirmed sustained gene expression for more than six months, importantly demonstrating the potential of this approach.[7] A similar gene therapy study for DMD, with colleague Christopher Walker, demonstrated that expressing the gene into deleted domain of an endogenous gene was likely to result in rejection of the gene product because of transgene immunity.[8] A recent trial has confirmed this concern.

An additional important contribution by the Mendell team was the development of the two-tier system for detection of DMD in the newborn. On the dried blood spot taken for detection of inheritable diseases, both CK and DNA are tested simultaneously. This seminal study of nearly 40,000 newborn males throughout Ohio showed the now acknowledged incidence of DMD at birth to be 1:5000.[9] This important study laid the groundwork for the implementation of newborn screening for DMD and early gene transfer to benefit the boys with DMD.

Dr. Mendell also led the Center in clinical trial(s) on exon skipping – noteworthy because it was the first therapeutic agent to show increased dystrophin expression in DMD and now more than a decade later dystrophin expression levels are still increasing and follow-up, long-term exon skipping outcomes demonstrates slowing in disease progression.[10;11] Eteplirsen is now approved by the FDA for commercial use, along with other exon skipping agents including casimersen and golodirsen.

A major milestone for gene therapy was the clinical trial and published article on SMA gene therapy showing unequivocal efficacy.[12] This was a milestone achievement because it saves the lives of infants when the gene is delivered in AAV9 in very high dose by intravenous administration. In addition, an important finding was that pre-administration of prednisone 1 day prior to delivery with extension for 30-60 days significantly controls hepatotoxicity. Use of corticosteroids has now become standard in gene therapy trials. SMA gene therapy has now been approved by the FDA for clinical therapy as onasemnogene abeparvovec. In addition, based on the efficacy of SMA gene therapy, newborn screening for this severe disorder is now established in at least 38 states throughout the country. Treatment in the newborn period not only saves lives but results in normal to near normal milestones.[13]

Currently Dr. Mendell is investigating the systemic delivery of micro-dystrophin for DMD, and he recently published the first study to demonstrate its efficacy.[14] Of interest, the DMD trial used a different virus serotype, AAVrh74, for gene transfer; this virus induced some adverse effects, but far fewer than other trials using high dose of virus or other AAV serotypes. The exceptional team at the Center for Gene Therapy is playing a leading role in establishing safety and efficacy in other childhood diseases. Clinical trials have now demonstrated excellent gene expression and functional improvement in limb-girdle muscular dystrophy.

A life of such singular accomplishment is typically accompanied by widespread recognition and numerous tributes, and Dr. Mendell has more such honors than can be mentioned in a short biographical sketch. To name a few, he was awarded the 1989 Presidential Award for Outstanding Research by the American Neurological Association, the 2017 Science Magazine Breakthrough Achievement Award, given in recognition of the most influential science article of the year in any journal, the 2018 Clinical Research Forum Distinguished Clinical Research Achievement Award by the National Press Club, and the 2019 Lifetime Achievement Award from the Limb Girdle Muscular Dystrophy Foundation. In 2020, he was elected to the National Academy of Medicine, and the American Society of Gene and Cell Therapy created the Jerry Mendel Translational Science Award in his honor.

The seminal contributions by Dr. Mendell and his Nationwide Children's Hospital colleagues over the last 16 years have improved the lives of many infants and children with heritable neuromuscular disease. Importantly, the techniques they developed can now be applied to other genetic diseases. A lifetime of dogged determination to make a difference in the lives of children has paid wonderful dividends.

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Phillip R. Dodge Young Investigator Award

Monica Lemmon, MD

By Mohamad A. Mikati MD

This year's Philip R. Dodge Young Investigator Award recipient is Dr. Monica Lemmon.

Dr. Lemmon obtained her Bachelor's degree from Duke University, and her M.D. degree from Harvard University. She then completed her residency in Pediatric Neurology and her fellowship in Neonatal Neurology at Johns Hopkins. She joined us on the Pediatric Neurology Faculty at Duke University in 2015 as Assistant Professor of Pediatrics (Pediatric Neurology) and was promoted to the rank of Associate Professor in 2020.

Dr. Lemmon's research work is leading the development of a novel field of pediatric neurology clinical research namely, decision making and its ethics. She also has been a thought leader in ethics response to COVID pandemic. Dr. Lemmon has performed research and published on topics related to decision-making and communication, in such journals as *JAMA Neurology*, *JAMA Pediatrics*, *Neurology*, and *Pediatrics*. She has presented original research at national meetings of the Pediatric Academic Societies (PAS) and Child Neurology Society (CNS). Dr. Lemmon has identified a major gap in the literature surrounding how we understand, measure, and improve decision making for critically ill infants. Her work is truly unique; there are no other child neurologists with a focus in these areas. Dr. Lemmon's work is timely and is meeting the growing interest in measures of shared decision-making and the development of decision support tools applicable to pediatric neurology populations. She has forged relationships with collaborators within the Duke Division of Pediatric Neurology and collaborators at the Duke-Margolis Center for Health Policy, Duke School of Nursing, Department of Population Health Sciences, and School of Medicine. The SARS-CoV-2 pandemic introduced new challenges for early career researchers, especially for those with caregiving needs. Dr. Lemmon embraced these challenges, using her unique skillset to make urgent contributions to the pandemic response. She published 15 articles in 2020 alone, including four that directly address the impact of COVID-19 on research infrastructure and the care of high-risk infants and families. One of these papers, published in *JAMA Pediatrics*, outlines key considerations for resource allocation protocols involving children and neonates. Dr. Lemmon's thought leadership on key, urgent issues in child neurology underscores why she was uniquely deserving of the Dodge Young Investigator Award.

Dr. Lemmon successfully competed for funding through the National Palliative Care Research Center, and was awarded a K12 through the NINDS Child Neurologist Career Development Program. More recently, she began her K23, funded through NINDS on its first submission. Dr. Lemmon has been a very productive early-career researcher. She also has held many leadership positions including the following: membership on the Medical Advisory Board, Hope for Hypoxic Ischemic Encephalopathy, the American Academy of Neurology, Child Neurology Society, and Society for Pediatric Research. More importantly, she is a founding member of the Newborn Brain Society, a reviewer for leading journals and a very much sought-after speaker in her field. She is a regularly invited lecturer in different medical centers across the country. Dr. Lemmon's achievements and cutting edge contributions have been recognized by her multiple honors and awards including the Frank L. Coulson, Jr. Award for Clinical Excellence; Omolara A. Olaniyan Fellow Appreciation Award; Guy M. McKhann Award for Teaching Excellence; Osler Attending, Johns Hopkins Hospital; membership in the Society for Pediatric Research; and, most recently, with the Philip R. Dodge Young Investigator Award. She also has been a leading mentor for resident, fellows and medical students and an excellent clinician who is invariably receives the top reviews from patients and trainees alike.

It is very rare that one could find such a remarkable pediatric neurologist at such an early career stage who has shown such exceptional productivity, and outstanding abilities as a clinical scientist, educator and pathfinder. Her research combines cutting edge clinical approaches into the process of decision making and its ethics as well as in depth understanding of the underlying clinical science and unmatched insights and thoughtfulness. She surely will continue have a major, growing and lasting impact on the field of Pediatric Neurology.

2021 Hower Award

Jonathan Mink, MD, PhD

By Erika Augustine, MD, PhD and Jennifer Vermillion, MD

This year's Hower Award recipient is Jonathan Mink, MD, PhD. Dr. Mink is the Frederick A. Horner Distinguished Professor in Pediatric Neurology and Division Chief of Child Neurology at the University of Rochester in Rochester, NY. He served as the Child Neurology Society President from 2017-2019. His contributions to the field of Child Neurology are innumerable and include advancements in neuroscience, international leadership and dedication to the development and mentorship of trainees. Dr. Mink clearly embodies the accomplishments and ideals of the Hower Award.

Dr. Mink was born in Minneapolis, Minnesota. His first exposure to neurophysiology was accompanying his father to labs while his father completed his post-doctoral fellowship under James Olds, PhD from 1965-1957. For his undergraduate training, Dr. Mink attended Wesleyan University in Connecticut. During undergraduate training, he became interested in the brain mechanisms of motivation. He later obtained his Master's degree in Psychology, studying with David Adams and Harry Sinnamon.

In 1981, Dr. Mink matriculated at the MD/PhD program at Washington University in St. Louis. He found an outstanding PhD advisor in Dr. W. Thomas Thach, whose work focused on the role of the cerebellum in motor control. Dr. Mink applied Dr. Thach's approach to the study of cerebellar function to his study of the basal ganglia. Mink's PhD research formed the foundation for the "Mink Model" of the basal ganglia function, delineating the specific physiology of selection and inhibition of motor programs. His research in the physiology and pathophysiology of basal ganglia networks created the framework for a greater understanding of the role of the basal ganglia in clinical movement disorders. His mentorship from Dr. Thach was foundational to his development as a scientist, educator, and future mentor. Dr. Thach instilled in Dr. Mink a commitment to scientific rigor and emphasized the importance of balance in life.

Dr. Mink's early training initially led him to consider a career in Adult Neurology, but his career trajectory changed during his second year of medical school. During one particularly memorable class, Dr. Philip Dodge demonstrated a nuanced neurological examination of Dr. Scott Pomeroy's three children through play. That day, Jon realized that he could blend his interest in the neuroscience and his love for children through a career in Child Neurology. This class was so inspiring that Drs. Bradley Schlaggar and Howard Goodkin, who were in the audience that day, also became Child Neurologists. Dr. Mink later joined the Child Neurology residency program at Washington University, where he continued to be inspired by Dr. Dodge's kindness and great skill with both children and parents.

Following residency, Dr. Mink completed a Movement Disorders fellowship with Dr. Joel Perlmutter, a neuroimaging researcher and adult movement disorders specialist at Washington University. At that time, dedicated pediatric movement disorders fellowships were uncommon, and Dr. Perlmutter fostered Dr. Mink's ability to combine his expertise in basal ganglia physiology with his growing clinical expertise in pediatric movement disorders. Jon later joined the faculty at Washington University, where he started the functional surgery program in movement disorders.

In 2001, Dr. Robert Griggs recruited Dr. Mink to become the chief of the Child Neurology Division at the University of Rochester. Under his leadership as chief, he re-established the Child Neurology residency program and expanded the division

to 15+ full-time faculty. By that time, Dr. Mink emerged as an internationally recognized leader in movement disorders, leading the development of the first guidelines for use of Deep Brain Stimulation in treating adults with treatment-resistant Tourette syndrome. Dr. Mink started one of the few formal Pediatric Movement Disorders fellowship-training programs, now with more than 10 program graduates, including three international graduates. He shared his experience and expertise as a member of the national Taskforce on Childhood Motor Disorders and as co-author of the Pediatric Movement Disorders textbook, *Movement Disorders in Childhood*. In 2015, Dr. Mink was fittingly named the first recipient of the Dr. Oliver Sacks Award for Excellence in Tourette Syndrome from the Tourette Association of America.

Dr. Mink's research career began in basic science and neurophysiology. However, his research interests shifted to clinical research after colleagues sparked an interest in Batten diseases (Neuronal Ceroid Lipofuscinoses or NCLs). Dr. Frederick Marshall, an adult neurologist who specialized in movement disorders and dementia, and Dr. David Pearce, a biochemist, were studying Batten diseases at the University of Rochester. With Dr. Mink's expertise in movement disorders, they invited him to attend a family conference hosted by the Batten Disease Support and Research Association in 2002. This experience was transformative, and Dr. Mink has been a leader in natural history research in Batten diseases ever since. His leadership resulted in the development of the first validated clinical rating scale for the NCLs, the Unified Batten Disease Rating Scale and the designation of the University of Rochester as a Batten Center of Excellence. For his impact in Batten disease research, he received the prestigious H. Houston Merritt Award in 2019 from the American Academy of Neurology for excellence in clinically relevant research.

Dr. Mink has served as a leader in the fields of Neurology and Child Neurology. He has been an active member of the Child Neurology Society since 1994. Prior to his term as President of the Child Neurology Society, he served as the Councillor for the Northeast from 2007-2009, Chair of the Research Committee from 2005-2010, and Chair of the Scientific Selection and Program Planning Committee from 2013-2015. He has served as a leader in many important national and international organizations, including: Executive Board, International Child Neurology Association; National Advisory Neurological Disorders and Stroke Council; Board of Scientific Counselors, National Institute of Neurological Disorders and Stroke; and Pediatric Advisory Committee, Food and Drug Administration.

Dr. Mink most values his role as a mentor to trainees in Child Neurology and Pediatric Movement Disorders. Like his predecessor, Dr. Dodge, Dr. Mink has inspired many medical students with his passion for teaching to pursue careers in Child Neurology. He has trained or influenced the vast majority of Pediatric Movement Disorders specialists practicing in the United States today.

Dr. Mink is the model of leadership, exemplar of outstanding teaching, a highly regarded scholar and a wonderful colleague.

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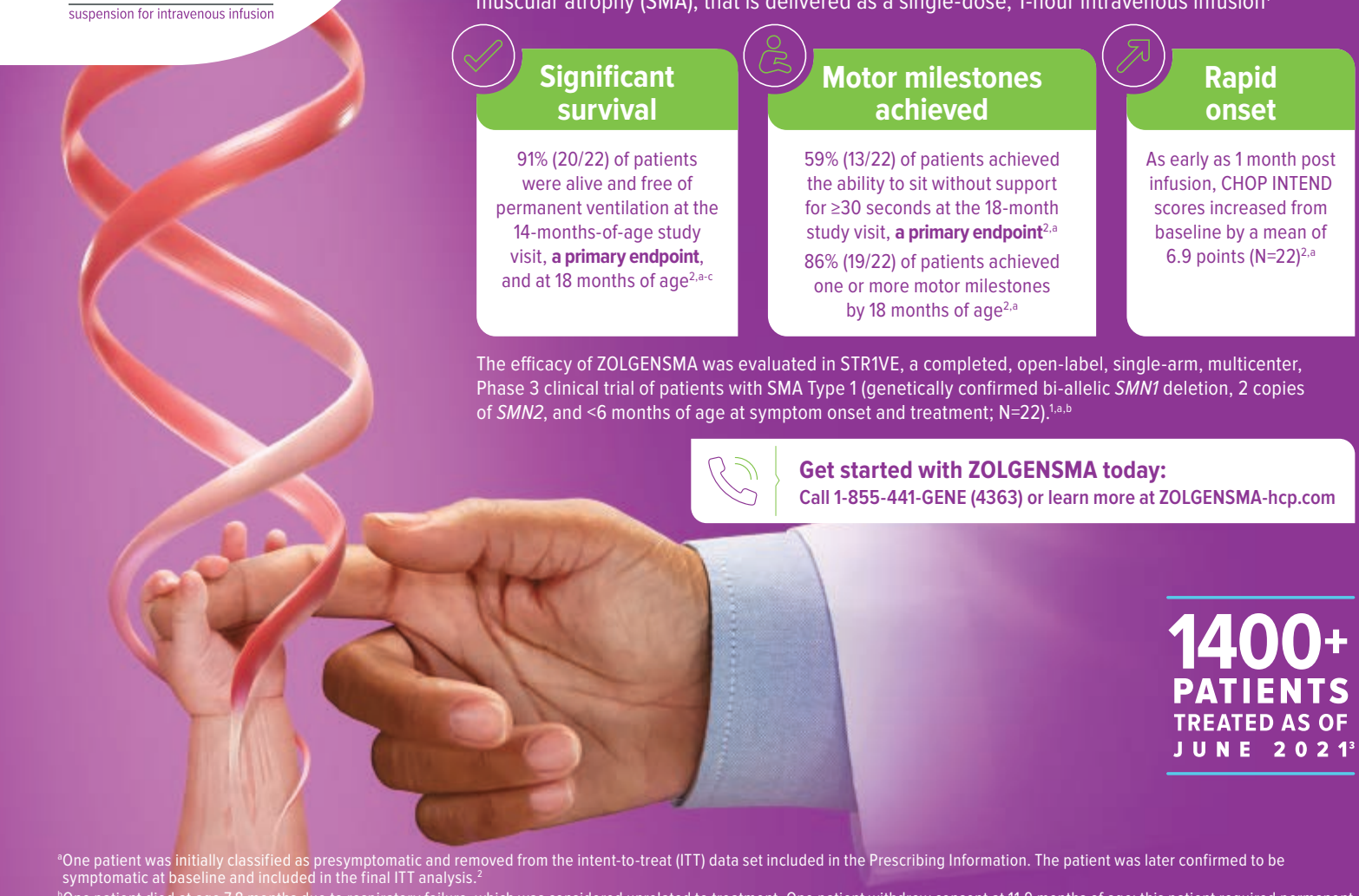
86% (19/22) of patients achieved one or more motor milestones by 18 months of age[2,a]

Rapid onset

As early as 1 month post infusion, CHOP INTEND scores increased from baseline by a mean of 6.9 points (N=22)[2,a]

The efficacy of ZOLGENSMA was evaluated in STR1VE, a completed, open-label, single-arm, multicenter, Phase 3 clinical trial of patients with SMA Type 1 (genetically confirmed bi-allelic *SMN1* deletion, 2 copies of *SMN2*, and <6 months of age at symptom onset and treatment; N=22).[1,a,b]

Get started with ZOLGENSMA today:
Call 1-855-441-GENE (4363) or learn more at ZOLGENSMA-hcp.com



1400+ PATIENTS TREATED AS OF JUNE 2021[3]

[a]One patient was initially classified as presymptomatic and removed from the intent-to-treat (ITT) data set included in the Prescribing Information. The patient was later confirmed to be symptomatic at baseline and included in the final ITT analysis.[2]

[b]One patient died at age 7.8 months due to respiratory failure, which was considered unrelated to treatment. One patient withdrew consent at 11.9 months of age; this patient required permanent ventilation at 11.0 months prior to withdrawal of consent. One patient discontinued participation at the age of 18.0 months, before the month 18 end-of-study visit, due to an adverse event of respiratory distress, which was considered unrelated to treatment.[2]

[c]Event is defined as death or the need for permanent ventilatory support consisting of ≥16 hours of respiratory assistance per day continuously for ≥14 days in the absence of an acute reversible illness, excluding perioperative ventilation.[1]

Indication and Important Safety Information

Indication

ZOLGENSMA is an adeno-associated virus vector-based gene therapy indicated for the treatment of pediatric patients less than 2 years of age with spinal muscular atrophy (SMA) with bi-allelic mutations in the *survival motor neuron 1* (*SMN1*) gene.

Limitations of Use

The safety and effectiveness of repeat administration or the use in patients with advanced SMA (e.g., complete paralysis of limbs, permanent ventilator dependence) has not been evaluated with ZOLGENSMA.

Important Safety Information

BOXED WARNING: Acute Serious Liver Injury

Acute serious liver injury and elevated aminotransferases can occur with ZOLGENSMA. Patients with pre-existing liver impairment may be at higher risk. Prior to infusion, assess liver function of all patients by clinical examination and laboratory testing (e.g., hepatic aminotransferases [aspartate aminotransferase (AST) and alanine aminotransferase (ALT)], total bilirubin, and prothrombin time). Administer a systemic corticosteroid to all patients before and after ZOLGENSMA infusion. Continue to monitor liver function for at least 3 months after infusion.

WARNINGS AND PRECAUTIONS

Thrombocytopenia

Transient decreases in platelet counts, some of which met the criteria for thrombocytopenia, were observed at different time points after ZOLGENSMA infusion. Monitor platelet counts before ZOLGENSMA infusion and on a regular basis for at least 3 months afterwards.

Thrombotic Microangiopathy

Cases of thrombotic microangiopathy (TMA) were reported approximately 1 week after ZOLGENSMA infusion. Obtain baseline creatinine and complete blood count before ZOLGENSMA infusion. Following infusion, monitor for thrombocytopenia as well as other signs and symptoms of TMA. Consult a pediatric hematologist and/or pediatric nephrologist immediately to manage if clinically indicated.

Elevated Troponin-I

Transient increases in cardiac troponin-I levels were observed following ZOLGENSMA infusion. Monitor troponin-I before ZOLGENSMA infusion and on a regular basis for at least 3 months afterwards.

ADVERSE REACTIONS

The most commonly observed adverse reactions (incidence ≥5%) in clinical studies were elevated aminotransferases and vomiting.

Please see Brief Summary of Prescribing Information on the adjacent page.

References: 1. ZOLGENSMA [prescribing information]. Bannockburn, IL: AveXis, Inc; 2021. **2.** Data on file. AveXis, Inc. 2020. **3.** Data on file. Novartis Gene Therapies, Inc. 2021.

NOVARTIS

For US healthcare professionals only.
09/2021 US-ZOL-21-0293

ZOLGENSMA® (onasemnogene abeparvovec-xioi) **Rx Only**
Suspension for intravenous infusion
Brief Summary of the Full Prescribing Information.
See Full Prescribing Information.

BOXED WARNING: ACUTE SERIOUS LIVER INJURY

- **Acute serious liver injury and elevated aminotransferases can occur with ZOLGENSMA.**
- **Patients with pre-existing liver impairment may be at higher risk.**
- **Prior to infusion, assess liver function of all patients by clinical examination and laboratory testing (e.g., hepatic aminotransferases [aspartate aminotransferase (AST) and alanine aminotransferase (ALT)], total bilirubin, and prothrombin time). Administer systemic corticosteroid to all patients before and after ZOLGENSMA infusion. Continue to monitor liver function for at least 3 months after infusion.**

INDICATIONS AND USAGE

ZOLGENSMA is an adeno-associated virus vector-based gene therapy indicated for the treatment of pediatric patients less than 2 years of age with spinal muscular atrophy (SMA) with bi-allelic mutations in the *survival motor neuron 1 (SMN1)* gene.

Limitation of Use: The safety and effectiveness of repeat administration of ZOLGENSMA or the use in patients with advanced SMA (e.g., complete paralysis of limbs, permanent ventilator dependence) has not been evaluated.

DOSAGE AND ADMINISTRATION

For single-dose intravenous infusion only.

The recommended dosage of ZOLGENSMA is 1.1×10^{14} vector genomes (vg) per kg of body weight.

- Administer ZOLGENSMA as an intravenous infusion over 60 minutes.
- Starting one day prior to ZOLGENSMA infusion, administer systemic corticosteroids equivalent to oral prednisolone at 1 mg/kg of body weight per day for a total of 30 days. At the end of the 30-day period of systemic corticosteroid treatment, check liver function by clinical examination and by laboratory testing. For patients with unremarkable findings, taper the corticosteroid dose over the next 28 days. If liver function abnormalities persist, continue systemic corticosteroids (equivalent to oral prednisolone at 1 mg/kg/day) until findings become unremarkable, and then taper the corticosteroid dose over the next 28 days. Consult expert(s) if patients do not respond adequately to the equivalent of 1 mg/kg/day oral prednisolone.

WARNINGS AND PRECAUTIONS

Acute Serious Liver Injury and Elevated Aminotransferases

Acute serious liver injury can occur with ZOLGENSMA. Prior to ZOLGENSMA infusion, a patient with infantile-onset SMA had elevated AST and ALT of unknown etiology (gamma-glutamyl transferase [GGT], total bilirubin and prothrombin time were normal). The patient was treated under an expanded access program in the United States. The patient received corticosteroids equivalent to oral prednisolone at 1 mg/kg/day for approximately 30 days, followed by a 14-day taper. Approximately 7 weeks after receiving ZOLGENSMA, the patient became jaundiced. Laboratory testing was consistent with acute serious liver injury, with AST level approximately 80 × ULN (upper limit of normal) and ALT level approximately 45 × ULN, total bilirubin approximately 4 × ULN, and plasma prothrombin time approximately 4 × ULN. Liver biopsy showed acute massive degeneration of hepatocytes, and massive mixed inflammatory infiltrate (primarily CD8-positive T lymphocytes). The patient recovered to baseline status after treatment with corticosteroids. Administration of ZOLGENSMA may result in aminotransferase elevations. Two (2/44) patients in clinical trials had increased AST and ALT levels up to 48 × ULN after ZOLGENSMA infusion. These patients, who were otherwise asymptomatic with normal total bilirubin, were managed with systemic corticosteroids, and the abnormalities resolved without clinical sequelae. Prior to ZOLGENSMA infusion, assess liver function by clinical examination and laboratory testing (hepatic aminotransferases [AST and ALT], total bilirubin level, and prothrombin time). Continue to monitor liver function for at least 3 months after ZOLGENSMA infusion (weekly for the first month, and then every other week for the second and third months, until results are unremarkable). Administer systemic corticosteroid before and after ZOLGENSMA infusion.

Thrombocytopenia

Transient decreases in platelet counts, some of which met the criteria for thrombocytopenia, were observed at different time points after ZOLGENSMA infusion. Monitor platelet counts before ZOLGENSMA infusion and on a regular basis afterwards (weekly for the first month; every other week for the second and third months until platelet counts return to baseline).

Thrombotic Microangiopathy

Cases of thrombotic microangiopathy (TMA) were reported approximately one week after ZOLGENSMA infusion in the post-marketing setting. TMA is characterized by thrombocytopenia, microangiopathic hemolytic anemia, and acute kidney injury. Concurrent immune system activation (e.g., infections, vaccinations) was identified in some cases. Monitor platelet counts, as well as signs and symptoms of TMA, such as hypertension, increased bruising, seizures, or decreased urine output. In case these signs and symptoms occur in the presence of thrombocytopenia, further diagnostic evaluation for hemolytic anemia and renal dysfunction should be undertaken. If clinical signs, symptoms and/or laboratory findings consistent with TMA occur, consult a pediatric hematologist and/or pediatric nephrologist immediately to manage TMA as clinically indicated.

Elevated Troponin-I

Transient increases in cardiac troponin-I levels (up to 0.176 µg/L) were observed following ZOLGENSMA infusion in clinical trials. The clinical importance of these findings is not known. However, cardiac toxicity was observed in animal studies. Monitor troponin-I before ZOLGENSMA infusion and on a regular basis for at least 3 months afterwards (weekly for the first month, and then monthly for the second and third months until troponin-I level returns to baseline).

ADVERSE REACTIONS

The safety data described in this section reflect exposure to ZOLGENSMA (onasemnogene abeparvovec-xioi) in four open-label studies conducted in the United States, including one completed clinical trial, two ongoing clinical trials, and one ongoing observational long-term follow-up study of the completed trial. A total of 44 patients with SMA received intravenous infusion of ZOLGENSMA, 41 patients at or above the recommended dose, and 3 patients at a lower dose. The patient population ranged in age from 0.3 months to 7.9 months at the time of infusion (weight range 3.0 kg to 8.4 kg). The most frequent adverse reactions (incidence ≥ 5%) observed in the 4 studies were elevated aminotransferases* 27.3% (12/44) and vomiting 6.8% (3/44).

One patient in an ongoing non-United States clinical trial initially presented with respiratory insufficiency 12 days after ZOLGENSMA infusion and was found to have respiratory syncytial virus (RSV) and parainfluenza in respiratory secretions. The patient had episodes of serious hypotension, followed by seizures, and was found to have leukoencephalopathy (brain white matter defects) approximately 30 days after ZOLGENSMA infusion. The patient died after withdrawal of life support 52 days after ZOLGENSMA infusion.

Immunogenicity

In ZOLGENSMA clinical trials, patients were required to have baseline anti-AAV9 antibody titers of ≤ 1:50, measured using an enzyme-linked immunosorbent assay (ELISA). Evidence of prior exposure to AAV9 was uncommon. The safety and efficacy of ZOLGENSMA in patients with anti-AAV9 antibody titers above 1:50 have not been evaluated. Perform baseline testing for the presence of anti-AAV9 antibodies prior to ZOLGENSMA infusion. Retesting may be performed if anti-AAV9 antibody titers are reported as > 1:50.

Following ZOLGENSMA infusion, increases from baseline in anti-AAV9 antibody titers occurred in all patients. In the completed clinical trial, anti-AAV9 antibody titers reached at least 1:102,400 in every patient, and titers exceeded 1:819,200 in most patients. Re-administration of ZOLGENSMA in the presence of high anti-AAV9 antibody titer has not been evaluated.

*Elevated aminotransferases include elevation of alanine aminotransferase (ALT) and/or aspartate aminotransferase (AST). In the completed clinical trial, one patient (the first patient infused in that study) was enrolled prior to the protocol amendment instituting administration of prednisolone before and after ZOLGENSMA infusion.

DRUG INTERACTIONS

Where feasible, adjust a patient's vaccination schedule to accommodate concomitant corticosteroid administration prior to and following ZOLGENSMA infusion. Certain vaccines, such as MMR and varicella, are contraindicated for patients on a substantially immunosuppressive steroid dose (i.e., ≥ 2 weeks of daily receipt of 20 mg or 2 mg/kg body weight of prednisone or equivalent). Seasonal RSV prophylaxis is not precluded.

USE IN SPECIAL POPULATIONS

Pediatric Use

Administration of ZOLGENSMA to premature neonates before reaching full-term gestational age is not recommended, because concomitant treatment with corticosteroids may adversely affect neurological development. Delay ZOLGENSMA infusion until the corresponding full-term gestational age is reached. There is no information on whether breastfeeding should be restricted in mothers who may be seropositive for anti-AAV9 antibodies. The safety of ZOLGENSMA was studied in pediatric patients who received ZOLGENSMA infusion at age 0.3 to 7.9 months (weight range 3.0 kg to 8.4 kg). The efficacy of ZOLGENSMA was studied in pediatric patients who received ZOLGENSMA infusion at age 0.5 to 7.9 months (weight range 3.6 kg to 8.4 kg).

Hepatic Impairment

One patient who received ZOLGENSMA developed acute serious liver injury; that patient had elevated aminotransferase levels prior to ZOLGENSMA infusion. In clinical trials, elevation of aminotransferases was observed in patients following ZOLGENSMA infusion.

PATIENT COUNSELING INFORMATION

See the ZOLGENSMA Full Prescribing Information for the Patient Counseling Information.

Please visit ZOLGENSMA-HCP.com for Full Prescribing Information, including Boxed Warning.

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zolgensma® (onasemnogene abeparvovec-xioi)
suspension for intravenous infusion

NOVARTIS

The Asian Oceanian Child Neurology Association (AOCNA)

Dear President Phillip L. Pearl,

I take great pleasure to congratulate the 50th anniversary of the Child Neurology Society Meeting. On behalf of AOCNA, I would like to offer my sincere gratitude and appreciation to all Child Neurology Society members who have dedicated their professional knowledge to serve pediatricneurology patients, devoted their time to research and shared their valuable resources and information with our colleagues in CNS meetings.

CNS and AOCNA have a great and close partnership. Every year, many AOCNA members participate in CNS meetings, where they have not only joined in the presentations, but also learned new innovation and knowledge in the field. In addition, at the 15th AOCCN meeting held in Kuala Lumpur, Malaysia, we had the honor of having Dr. Jonathan Mink, Dr. Douglas Sproule, Dr. Nicholas Abend, and Dr. Zachary Warren, as guest speakers to share their research and experience with us.

On this very special occasion, I wouldlike to wish the 50th anniversary celebration of CNS a remarkable and successful meeting, and all members of CNS continued success in the years to come.

Yours truly,

Ching Shiang Chi. M.D.
President,
The Asian and Oceanian Child Neurology Association

EUROPEAN PAEDIATRIC NEUROLOGY SOCIETY

Dear CNS friends and colleagues

On behalf of the European Paediatric Neurology Society (EPNS), I would like to express my heartfelt congratulations to the CNS as you celebrate your Golden anniversary.
This special milestone is a time for reflecting on your proud history and looking ahead to the future. Ever since its founding 50 decades ago the CNS has been dedicated to establishing strong platforms in research and education, making a significant contribution to the field of child neurology. Sincere thanks are extended to all past and present board members, committee members, CNS members and supporting teams for their outstanding work, commitment, and accomplishments.

For many years, the EPNS has enjoyed a close collaborative relationship with the CNS and today it is with pleasure that our partnership is more active than ever. Together with the African Child Neurology Association (ACNA), the Asian and Oceanian Child Neurology Association (AOCNA) and the International Child Neurology Association (ICNA), our Societies are working to further our collective goals and take forward crucial advocacy opportunities to raise the voice of child neurology across the globe.

The EPNS takes this opportunity to wish the CNS continued success and looks forward our bright collaborate future together. Enjoy your celebrations and here's to the next 50 years and beyond!

Best wishes

Professor Sameer Zuberi, EPNS President

Dear Professor Pearl and members of the Child Neurology Society,

My congratulations on the CNS reaching its 50th year of activities addressing the needs of children with neurologic challenges. The world has become a smaller place and the collaborations between the International Child Neurology Association and the Child Neurology Society illustrate how distance is no longer a barrier. The virtual ICNC/CNS2020 was a wonderful opportunity for our two organisations to present a united approach to upskill, update and engage with through the innovative program. The global outreach work pioneered by CNS to support resource limited regions of the world has resulted in invaluable opportunities which have been further strengthened by the recent combining of projects with the ICNA. Educational activities have reached parts of Central America and Africa especially. ICNA's current project to upskill child neurology in Zimbabwe has been enthusiastically supported by CNS. I am sure that the forthcoming 2021 CNS congress in Boston will be a huge success and celebration. I hope to see you there, as well as at the next ICNC in Turkey 3-7th October 2022!

My best wishes

Jo Wilmshurst

President ICNA (2018-2022)

Dear Prof Pearl,

Heartiest Congratulations to you, and the entire leadership of the Child Neurology Society (CNS), on its 50 th Anniversary!!

From a membership of 233 in 1972, to over 2000 members currently, CNS has emerged as one of the most powerful child neurology society. Its development has been phenomenal, and its diversified scientific and academic activities have influenced the professional growth of all its members. In addition, several parents' support groups have greatly benefitted from the CNS.

My association with the CNS is long standing -almost since its inception. In PGI Chandigarh, we had the pleasure of hosting some eminent leaders of the CNS as Visiting Professors in our department. It has been our honour that many of our residents were awarded the D'souza International fellowship of the CNS! I have had the pleasure of participating in some of the CNS meetings and have been highly impressed not only by the state of art scientific content of the meetings, but also by the friendly demeanour of most of the members.

Several leaders of the CNS have been Board members of the International Child Neurology Association (ICNA). The recent joint conference of the CNS and ICNA in San Diego (which had to be converted to a Virtual meeting last minute) was reflective of a very successful collaboration and has paved the way for further joint activities. The theme for this year's 50th/Golden Anniversary CNS meeting: "connecting past and present to future in responding meaningfully to the challenges of our time" is very apt and I look forward to participating in this historic meeting. The CNS and ICNA have common goals and objectives and I hope that we will together plan some exciting educational, research and other professional activities in the future for the benefit of children with neurological disorders across the world!

Once again many, many, congratulations on the Golden Anniversary of the CNS and best wishes for its bright future!!

Pratibha Singhi

Secretary General & President-Elect

The International Child Neurology Association

Schedule at a Glance

All meetings/sessions at The Hynes Convention Center

SESSIONS highlighted in maroon are offered for CME credit as part of the CNS Scientific Program.

Live-streamed sessions:
Legacy Luncheon
PECN
SYMPOSIUM I - VI
Seminars 1-9

Tuesday, September 28

START	*END*	*MEETING/SESSION*	*ROOM ASSIGNED*
8:00 AM	7:00 PM	Speaker Ready	300
12:00 PM	7:00 PM	CNS Registration	Pre-Function Hall CD
6:00 AM	10:00 PM	Nursing Room	Mamava Nursing Pod
2:00 PM	5:30 PM	Podcast Room 1	107
2:00 PM	5:30 PM	Podcast Room 2	108
1:00 PM	5:15 PM	Pellock Seminar (Lectures & Breakouts)	309
6:00 PM	8:00 PM	Pellock Dinner & Lecture	311

Wednesday, September 29

START	*END*	*MEETING/SESSION*	*ROOM ASSIGNED*
6:00 AM	7:30 PM	Speaker Ready	300
7:00 AM	7:00 PM	CNS Registration	Pre-Function Hall CD
6:00 AM	10:00 PM	Nursing Room	Mamava Nursing Pod
7:30 AM	5:30 PM	Podcast/ #1	107
7:30 AM	5:30 PM	Podcast/ #2	108
6:00 AM	11:59 PM	Press Room	111
7:30 AM	8:00 AM	Continental Breakfast	Foyer
7:00 AM	10:00 AM	PNJ Editorial Board Meeting	200
8:00 AM	11:00 AM	Symposium I: CNF: Shortening the Diagnostic Odyssey in Children with Neurologic Conditions	Ballroom C
11:30 AM	1:30 PM	Kenneth F. Swaiman CNS Legacy Luncheon	Auditorium
1:45 PM	5:30 PM	Pellock Seminar (Lectures & Breakouts)	309
2:00 PM	3:00 PM	PECN Business Meeting	312
2:15 PM	3:30 PM	SEMINAR 1: Lessons Learned from Establishing an Adult Transition Clinic	Ballroom C
		Platform Session 1 (CANCELLED)	
3:00 PM	5:00 PM	PECN Meeting (CME)	312
3:30 PM	4:00 PM	PM Break	
4:00 PM	5:15 PM	Platform Session 2	302/304
4:00 PM	5:15 PM	SEMINAR 2: Updates in Pediatric COVID-19 for the Pediatric Neurologist	Ballroom AB
6:00 PM	7:30 PM	Opening Reception Supported by a grant from the 2021 Local Host, the Department of Neurology, Boston Children's Hospital	Exhibit Hall CD
8:00 PM	10:00 PM	Movement Disorders	302/304

EXHIBITS & POSTER REVIEW

EXHIBIT HALL

WEDNESDAY
6:00 PM-7:30 PM
Welcome Reception
Supported by Dept of Neurology, Boston Children's Hospital

THURSDAY
11:30 AM-6:30 PM
Lunch served
11:45 AM-1:45 PM
Poster Review

Wine & Cheese Reception
5:00 PM-6:30 PM
Poster Review

FRIDAY
7:00 AM-10:30 AM
Breakfast served
7:00 AM-8:15 AM
Poster Review

Thursday, September 30

START	END	MEETING/SESSION	ROOM ASSIGNED
6:00 AM	6:00 PM	Speaker Ready	300
7:00 AM	7:00 PM	CNS Registration	Pre-Function Hall CD
6:00 AM	10:00 PM	Nursing Room	Mamava Nursing Pod
7:30 AM	5:30 PM	Podcast #1	107
7:30 AM	5:30 PM	Podcast #2	108
6:00 AM	11:59 PM	Press Room	111
6:30 AM	7:00 AM	Continental Breakfast	
7:00 AM	8:00 AM	Platform Session 3	Ballroom A
7:00 AM	8:00 AM	Platform Session 4	Ballroom B
		Platform Session 5 (CANCELLED)	
7:00 AM	8:15 AM	Industry Sponsored Event - PTC Therapeutics	312
8:30 AM	11:45 AM	SYMPOSIUM II: PRESIDENTIAL SYMPOSIUM: The CNS at 50! Past, Present, and Future	Auditorium
12:00 PM	12:30 PM	CNS Annual Business Meeting	Auditorium
11:30 AM	6:30 PM	Exhibit Hall Open; exhibits, posters, lunch, wine & cheese reception	Exhibit Hall CD
11:45 PM	1:45 PM	Lunch; exhibits & posters	Exhibit Hall CD
12:00 PM	2:00 PM	Industry Sponsored Event - Zogenix/Miller Medical	312
1:00 PM	2:15 PM	SEMINAR 3: The Brave New World of Pediatric Spinal Muscular Atrophy – Implications of Newborn Screening and Effective Treatment	Ballroom AB
1:00 PM	2:15 PM	SEMINAR 4: Neurologic Implications of Youth Sports Participation	302/304
2:15 PM	2:45 PM	PM Break	Foyer
2:45 PM	3:15 PM	Martha Bridge Denckla Award Lecture: Disease Targeted Treatment Translation in Fragile X Syndrome and Neurodevelopmental Disabilities: The First Chapter	Auditorium
3:15 PM	5:30 PM	SYMPOSIUM III: Neurological Manifestations and Long-Term Sequela of Pediatric COVID-19 Infections	Auditorium
4:00 PM	5:15 PM	SEMINAR 5: CP to You is Not CP to Me – Strategies for Mitigating Practice Variability in Cerebral Palsy Care	Ballroom C
5:00 PM	6:30 PM	Wine & Cheese Reception; exhibits & posters	Exhibit Hall CD
		Alumni Receptions	

Schedule at a Glance

SESSIONS highlighted in maroon are offered for CME credit as part of the CNS Scientific Program.

Industry Sponsored Sessions are accredited through independent CME providers and/or are Product Theaters offering no CME credit. See pages 64-66 for more information.

EXHIBITS & POSTER REVIEW

EXHIBIT HALL

WEDNESDAY
6:00 PM-7:30 PM
Welcome Reception
Supported by Dept of Neurology, Boston Children's Hospital

THURSDAY
11:30 AM-6:30 PM
Lunch served
11:45 AM-1:45 PM
Poster Review

Wine & Cheese Reception
5:00 PM-6:30 PM
Poster Review

FRIDAY
7:00 AM-10:30 AM
Breakfast served
7:00 AM-8:15 AM
Poster Review

Friday, October 1, 2021

START	*END*	*MEETING/SESSION*	*ROOM ASSIGNED*
6:30 AM	5:00 PM	Speaker Ready	300
7:00 AM	6:00 PM	CNS Registration	Pre-Function Hall CD
6:00 AM	10:00 PM	Nursing Room	Mamava Nursing Pod
7:30 AM	5:30 PM	Podcast #1	107
7:30 AM	5:30 PM	Podcast #2	108
6:00 AM	11:59 PM	Press Room	111
7:00 AM	8:00 AM	Breakfast	Exhibit Hall CD
7:00 AM	10:30 AM	Exhibit Hall Open - Exhibits & Posters	Exhibit Hall CD
7:00 AM	8:15 AM	Industry Sponsored Event - Biogen	312
7:00 AM	8:00 AM	2021 CNS Arnold P. Gold Humanism in Medicine Breakfast Workshop (Reservation/Ticket required)	210
8:15 AM	8:30 AM	CNS/CNF Awards	Auditorium
8:30 AM	9:00 AM	Philip R. Dodge Young Investigator Award Lecture: Communicating Neurologic Prognosis: Challenges and Opportunities	Auditorium
9:00 AM	9:45 AM	Bernard Sachs Award Lecture: Gene Therapy Changing the Outcomes for Children with Neuromuscular Disease	Auditorium
9:45 AM	12:00 PM	SYMPOSIUM IV: Progress in Child Neurology through the Lens of an NINDS Career Development Program	Auditorium
12:00 PM	1:00 PM	Lunch	Ballroom
12:30 PM	1:45 PM	SEMINAR 6: Medulloblastoma, New Clinical and Translational Insights: The Path Forward	Ballroom C
12:30 PM	1:45 PM	SEMINAR 7: Disorders of Consciousness in Critically Ill Children: Curing Coma for the Developing Brain	302/304
12:30 PM	1:45 PM	SEMINAR 8: The Critical Period of Memory Development: Construction, Destruction and Reconstruction	303
2:15 PM	4:30 PM	SYMPOSIUM V: Developing Treatments for Pediatric Epilepsies: From Models to the Clinic	Auditorium
2:15 PM	4:30 PM	SYMPOSIUM VI: The Tiny Elephant in the Zoom Room: Harnessing a Crisis to Recover, Maintain and Enhance Career Development in Child Neurology	302/304
5:00 PM	6:15 PM	SEMINAR 9: NEURO-HUMANITIES: Neurologists and Neurology in Art, Comedy, Poetry, and Music Wine & Cheese Reception	Ballroom C
6:30 PM	8:30 PM	Closing Gala Reception	Ballroom B
		Alumni Receptions	

Saturday, October 2

START	*END*	*MEETING/SESSION*	*ROOM ASSIGNED*
6:30 AM	12:00 PM	Speaker Ready	300
8:00 AM	1:00 PM	CNS Registration	Pre-Function Hall CD
6:00 AM	4:00 PM	Nursing Room	Mamava Nursing Pod
8:00 AM	11:30 AM	Podcast #1	107
6:00 AM	4:00 PM	Press Room	111
8:15 AM	8:45 AM	Continental Breakfast	Foyer
8:45 AM	9:30 AM	Hower Award Lecture: Mentors and Proteges: Standing on the Shoulders of Giants and Following Footsteps into the Future	Auditorium
9:45 AM	12:00 PM	SYMPOSIUM VII: Are We Poised for a Therapeutic Revolution in Child Neurology?	Auditorium
1:00 PM	5:00 PM	CNS Clinical Research Annual Workshop: 2021 – Pediatric Neurology Clinical Trials – Introduction to the Series Reservation/Ticket required	TBD

CME CREDIT

All credits earned must be claimed/requested once, at the end of the meeting.

- Please complete survey form on Survey Monkey after attending all sessions for which you are requesting credit, whether live in Boston or on virtual meeting platform.
- All CME accredited sessions are recorded and will be available on the virtual platform October 2 - November 2, 2021.
- Complete online survey to claim CME credit by November 30 (11:59 pm EST)

CME certificate (pdf) will be sent to the email address following completion, beginning December 1.

No CME credit for 2021 will be issued for surveys completed after November 30, 2021.

SURVEY LINK:
HTTPS://WWW.SURVEYMONKEY.COM/R/2021_CNS_CME_SURVEY

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

5 Things to Know About the Meeting

50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
BOSTON • MASSACHUSETTS

1 KENNETH F. SWAIMAN LEGACY LUNCHEON

Wednesday, September 29
11:30 AM – 1:30 PM
Reservation/Ticket required

2 WEDNESDAY & FRIDAY RECEPTIONS

Wednesday, September 29
6:00 PM – 7:30 PM, Exhibit Hall CD
Jazz Ensemble: Berklee College of Music
Local Host: Department of Neurology,
Boston's Children's Hospital

Friday, October 2
6:30 PM – 8:30 PM
Hynes Auditorium
Jazz Ensemble: Berklee College of Music

3 EXHIBITS & POSTERS EXHIBIT HALL CD

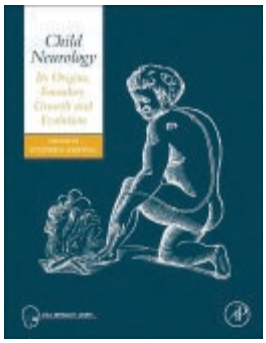
Wednesday, September 29,
6:00 PM – 7:30 PM (exhibits only, no posters)

Thursday, September 30,
11:30 AM - 6:30 PM
lunch served, poster review

Thursday, September 30,
Lunch: 11:45 AM - 1:45 PM
Wine & Cheese Reception, Poster review: 5:00 PM - 6:30 PM

Friday, October 1
7:00 AM – 10:30 AM
Breakfast served 7:00 AM – 8:15 AM, posters

4 FOUNDERS BOOK



A limited number of hard cover copies are available for purchase at the registration desk in Boston for 50% off ($100). Several book signings will be scheduled throughout the meeting with profile subjects and authors on hand to sign.

5 PHOTO OPS: HISTORY WALL & FENWAY PARK

A special 60-ft History Wall depicting every CNS Meeting from 1972-2021 will include space for all members to sign their names and add a comment below their 1st CNS Meeting and/or their Favorite CNS Meeting.

A Fenway Park backdrop will be available on Floor 2 for photo ops throughout the meeting (other than when formal photos are being taken by CNS photographer, Suzanne Shaff).

Wednesday, September 29

Room assignments: refer to Schedule at a Glance, pp 44-47

50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
BOSTON • MASSACHUSETTS

8:00 AM – 11:00 AM
SYMPOSIUM I:
CHILD NEUROLOGY FOUNDATION: SHORTENING THE DIAGNOSTIC ODYSSEY IN CHILDREN WITH NEUROLOGIC CONDITIONS

Supported by the Child Neurology Foundation

Organizer:
Child Neurology Foundation

Welcome
Scott L. Pomeroy, MD, PhD
Harvard Medical School,
Boston Children's Hospital,
Boston, MA

Utilizing the Latest Information and Technology to Diagnose and Treat Neurologic Conditions

How a Whole Genome Sequencing Opportunity Impacted 25 Children, Caregivers and their Medical Providers
Anup D. Patel, MD, FAAN, FAES
Nationwide Children's Hospital,
Columbus, OH

Getting from Gene to Treatment and Disease-Specific Clinical Trials
Erika Augustine, MD, MS
Kennedy Krieger Institute,
Baltimore, MD

Possibilities with N of 1 Trials
Christelle Moufawad El Achkar, MD
Boston Children's Hospital,
Harvard Medical School,
Boston, MA

Participant Reflections

Break

How to Support Families Through the Journey

How to Handle the Various Journeys
Heather C. Mefford, MD, PhD
St. Jude Children's Research Hospital, Memphis, TN

Empowering Families to be Advocates: Panel Discussion

Moderator:
Annapurna Poduri, MD, MPH
Boston Children's Hospital,
Harvard Medical School,
Boston, MA

Panel:
Anne Berg, PhD
Northwestern University Feinberg School of Medicine, Chicago, IL

Louise Bier, MS, CGC
Columbia University,
New York, NY

Krista Harding
National Multiple Sclerosis Society, Minneapolis, MN

Adam L. Hartman, MD
National Institute of Neurological Disorders and Stroke, NIH,
Rockville, MD

Closing Comments & Next Steps

Scott L. Pomeroy, MD, PhD
Harvard Medical School,
Boston Children's Hospital,
Boston, MA

11:30 AM – 1:30 PM
KENNETH F. SWAIMAN CNS LEGACY LUNCHEON

Welcome and Introduction
Phillip L. Pearl, MD
President, Child Neurology Society

Recognition of Past CNS Presidents

Recognition of Past CNS Secretary-treasurers and Councillors

Presentation of 2021 Arnold P. Gold Foundation Humanism in Medicine Award
Mary L. Zupanc, MD, FAAN, FAAP
University of California-Irvine,
CHOC Children's Hospital,
Irvine, CA

Recognition of Past Gold Humanism Award Recipients

Presentation of 2021 Roger & Mary Brumback Lifetime Achievement Awards
Robert J. Baumann, MD, FAAN, FAAP; University of Kentucky,
Lexington, KY

Sidney M. Gospe, Jr, MD, PhD
University of Washington,
Seattle, WA

SESSIONS highlighted in maroon are designated for CME credit.
Agenda and amount of CME credits available are subject to change.

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

Recognition of Past Roger & Mary Brumback Lifetime Achievement Award Recipients

Recognition of Past Bernard Sachs Award Lecturers

Recognition of Past Hower Award Lecturers

Presentation of 2021 CNS/PECN Training Director Award
Miya Asato, MD
University of Pittsburgh, Pittsburgh, PA

Recognition of Past CNS/PECN Training Director Award Recipients

Recognition of Past Phillip R. Dodge Young Investigator Award Recipients

Recognition of Past Outstanding Junior Member Award Recipients

Presentation of 2021 Outstanding Junior Member Awards

Rhandi Christensen, MD, PhD
Pediatric Neurology, University of Toronto, The Hospital for Sick Children, Toronto, ON

Darius Ebrahimi-Fakhari, MD, PhD
Boston Children's Hospital & Harvard Medical School, Boston, MA

Laura Gilbert, DO, MBA
Washington University in St. Louis, St. Louis Children's Hospital, St. Louis, MO

Hannah Wellman, MD
University of Colorado, Aurora CO

SESSIONS highlighted in maroon are designated for CME credit. Agenda and amount of CME credits available are subject to change.

Presentation of Outstanding Junior Member Award-Post Graduate

Eric M. Chin, MD
Kennedy Krieger Institute, Johns Hopkins University School of Medicine, Baltimore, MD

Thiviya Selvanathan, MD FRCPC
The Hospital for Sick Children, Toronto, ON

Presentation of M. Richard Koenigsberger Scholarship Award
Jennifer Keene, MD, MS, MBA
Washington University in St Louis, St Louis, MO

Presentation of Bhuwan Garg High School Student Neuroscience Award
Meagan Ryan, Ossining, NY

2:00 PM – 5:00 PM
PROFESSORS & EDUCATORS OF CHILD NEUROLOGY (PECN) MEETING

Organizer:
Nancy Bass, MD
Rainbow Babies and Children's Hospital, Cleveland, OH

PECN: Business Meeting (1 hour)

Introduction and Agenda
Nancy Bass, MD

CNS/PCN Leadership and Diversity Task Force Update
Rujuta Wilson, MD
UCLA David Geffen School of Medicine, Los Angeles, CA

Treasurer Report
Karl Kuban, MD
Boston University Medical Center, Boston, MA

Match Report
Leon Dure, MD
University of Alabama at Birmingham, Birmingham, AL

CNCDP-K12 Report
Brad Schlaggar, MD, PhD
Kennedy Krieger Institute, Baltimore, MD

Updates AAP Section of Pediatric Neurology
Tim Lotze, MD
Baylor College of Medicine, Houston, TX

Updates AAN Section of Child Neurology
David Mandelbaum, MD, PhD
Brown University, Providence, RI

Q & A

PECN: NEUROLOGY EDUCATION REBOOT: BEYOND THE PANDEMIC
(2 hours of CME Content)
Livestreamed beginning at 3:00 PM

Organizer:
Nancy Bass, MD

Development and Implementation of a Virtual Learning Curriculum
Jessica Goldstein, MD
Rainbow Babies & Children's Hospital, Case Western Reserve University School of Medicine, Cleveland, OH

CNS Electronic Communication Committee: Educational Tools: Case Studies/Pod Casts/ Telemedicine Tool Kit
David Hsieh, MD
San Antonio, TX, USA

Introduction to the Neuroequity Coalition: Transitions into a Residency Curriculum
Roxanna Nahvi, MD
New York Medical College, New York, NY

Virtual Interviewing Season: Moving Forward Past the Pandemic
Margie Ream, MD, PhD
Nationwide Children's Hospital, Columbus, OH

2:15 PM – 3:30 PM

SEMINAR 1: LESSONS LEARNED FROM ESTABLISHING AN ADULT TRANSITION CLINIC

Organizer:
Julia Frueh, MD
Boston Children's Hospital,
Boston, MA

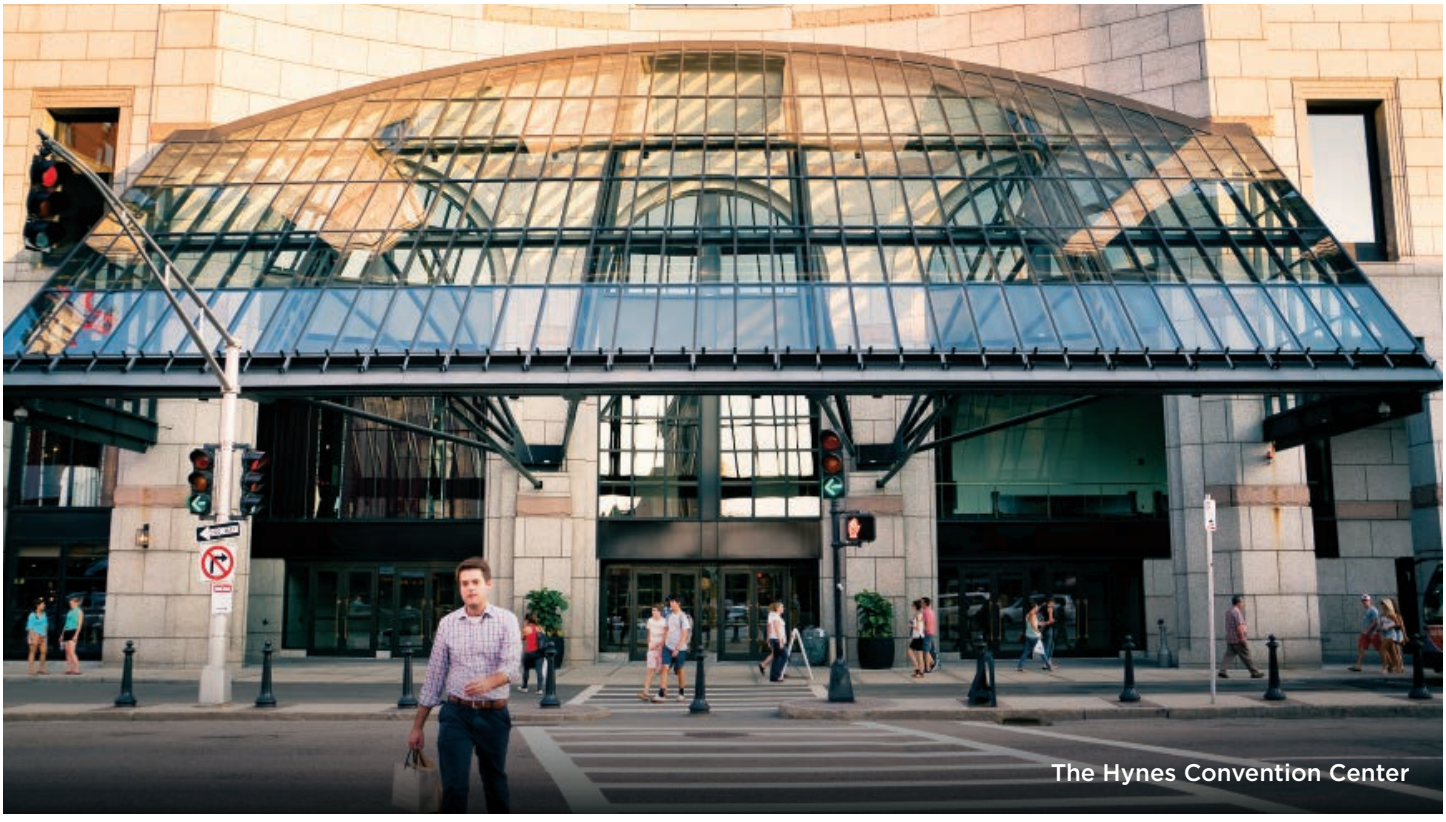
A Roadmap to Successful Transition in Neurology
Ann Tilton, MD, FAAN, FANA
Children's Hospital of New Orleans, New Orleans, LA

Hello from the Other Side – Lessons Learned from Building an Adult NDD Clinic from the Ground Up – Discussing Process and Impact
Jessica Sanders, MD
Children's Hospital Colorado,
Denver, CO

Leveraging Strengths and Experiences – Teaching the Next Generation of Neurologists to Care for Adults with IDD through an Innovative Approach: NDD/Child Neurology Attendings Supervised Adult Neurology Residents, while Adult Neurology Attendings Supervised Child Neurology/ NDD Trainees in a Collaborative Adult NDD Clinic
David K. Urion, MD, FAAN
Boston Children's Hospital,
Boston, MA

2:30 PM – 3:30 PM

PLATFORM SESSION 1 - (CANCELLED)
Session cancelled/combined with Platform Session 2 to be presented 4:00 - 5:30 pm in Rm 302-304; PL1-1-4 will be presented as 3rd, 4th, 5th and 6th papers in the session.



The Hynes Convention Center

4:00 PM – 5:00 PM
PLATFORM SESSION II

4:00 PM – 4:15 PM
PL2-1: Barks et al
The ALIGN Framework: A Parent-informed Approach to Prognostic Communication

4:15 PM – 4:30 PM
PL2-2: Garcia et al
Clinical, Pathological, and Molecular Characteristics of Diffuse Spinal Cord Gliomas

4:30 PM – 4:45 PM
PL2-3: Sansevere et al
Early Quantitative EEG Biomarkers of Cerebral Injury in Pediatric Cardiac Arrest

4:45 PM – 5:00 PM
PL2-4: Cornet et al
Neonatal Encephalopathy following SSRI Exposure in the Third Trimester of Pregnancy: A Population-based Study

4:00 PM – 5:15 PM
SEMINAR 2: UPDATES IN PEDIATRIC COVID-19 FOR THE PEDIATRIC NEUROLOGIST

Organizer:
Grace Gombolay, MD
Emory University, Children's Healthcare of Atlanta, Atlanta, GA

Neuropsychiatric Symptoms and Cytokines in Pediatric COVID-19 Patients
Grace Gombolay, MD

Neurological Manifestations of COVID-19 in Critically Ill Pediatric Patients
Kerri LaRovere, MD
Boston Children's Hospital, Harvard Medical School, Boston, MA

Neuroimaging Features in Pediatric COVID-19 Patients
Susan Palasis, MD
Ann & Robert H. Lurie Children's Hospital of Chicago, Northwestern University Feinberg School of Medicine, Chicago, IL

6:00 PM-7:30 PM
WELCOME RECEPTION

Financial support provided by 2021 Local Host, the Department of Neurology, Boston Children's Hospital

8:00 PM-10:00 PM
MOVEMENT DISORDERS SIG

Thursday, September 30

Room assignments: refer to Schedule at a Glance, pp 44-47

50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
BOSTON • MASSACHUSETTS

7:00 AM – 8:00 AM
PLATFORM SESSION III, IV & V

PLATFORM SESSION III

7:00 AM – 7:15 AM
PL3-1: Ebrahimi-Fakhari et al
Systematic Analysis of Brain MRI Findings in Adaptor Protein Complex 4 – associated Hereditary Spastic Paraplegia Reveals Patterns for Diagnosis and Disease Progression

7:15 AM – 7:30 AM
PL3-2: Deisseroth et al
Integrated Phenotypic and Mutational Approach Defines EBF3-related HADD Syndrome Genotype-phenotype Relationships

7:30 AM – 7:45 AM
PL3-3: Numis et al
Inflammatory Cytokine Levels are Associated with Non-response and Relapse of Infantile Spasms

7:45 AM – 8:00 AM
PL3-4: Gilbert L et al
Top 10 Areas of Research Need for People with Cerebral Palsy and Dystonia: A Novel Community-driven Agenda

PLATFORM SESSION IV

7:00 AM – 7:15 AM
PL4-1: Wellman et al
Multicenter Study of The Impact of Infections Including COVID-19 on the Incidence of Acute Inflammatory Demyelinating Polyneuropathy in Children

7:15 AM – 7:30 AM
PL4-2: Mallack et al
Early Natural History of Presymptomatic Childhood Cerebral Adrenoleukodystrophy

7:30 AM – 7:45 AM
PL4-3: Eichler et al
Outcomes in 51 Patients with Cerebral ALD from 2 Studies of Elivaldogene Autotemcel (eli-cel; Lenti-D) Gene Therapy

7:45 AM – 8:00 AM
PL4-4: Bonkowsky et al
Vitamin D Status & Latitude Predict Brain Lesions in Adrenoleukodystrophy

8:00 AM – 8:15 AM
PL4-5: Ciliberto et al
Palliative Epilepsy Surgery is not a Last Resort: Data from the Pediatric Epilepsy Research Consortium (PERC) Surgical Database

PLATFORM SESSION V – CANCELLED

WELCOME & GENERAL SESSION

8:30 AM – 11:45 AM
SYMPOSIUM II:
PRESIDENTIAL SYMPOSIUM: THE CNS AT 50! PAST, PRESENT, AND FUTURE

Organizer:
Phillip Pearl MD
President, CNS
Harvard Medical School and Berklee Institute of Music, Boston, MA

Historical Development of Child Neurology
Stephen Ashwal MD
Loma Linda University School of Medicine, Loma Linda, CA

CNS State of the Union
Phillip Pearl MD
President, CNS

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50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

The Future: Young Investigators SIG Representatives: Studies in Developmental Cognitive Neuroscience
Alexander Li Cohen, MD, PhD
Boston Children's Hospital,
Boston, MA

Studies in Movement Disorders
Darius Ebrahimi-Fakhari, MD, PhD
Boston Children's Hospital,
Harvard Medical School,
Boston, MA

Studies in Epilepsy Genetics
Christopher J. Yuskaitis, MD, PhD
Boston Children's Hospital and
Harvard Medical School,
Boston, MA

Studies in Neuro-oncology
Verena Staedtke, MD, PhD
Johns Hopkins University
School of Medicine,
Baltimore, MD

From Pellock Fellow to Pellock Faculty, Studies in Epilepsy
Giulia Benedetti, MD
Seattle Children's Hospital,
University of Washington,
Seattle, WA

Round Table: Future Directions in Cerebral Palsy and Child Neurology

Moderator:
Bhooma Aravamuthan, MD, DPhil
Washington University in
St. Louis School of Medicine,
St. Louis, MO

Panel:
Young-Min Kim, MD
Loma Linda University,
Loma Linda, CA

Michael Lopez, MD, PhD
University of Alabama at
Birmingham, Birmingham, AL

11:45 AM - 6:30 PM
EXHIBITS & POSTERS
Exhibit Hall
Lunch served (11:45 AM - 1:45 PM)
Wine & Cheese (5:00-6:30 PM)

12:00 PM – 12:30 PM
CNS BUSINESS MEETING

1:00 PM – 2:15 PM
SEMINAR 3:
THE BRAVE NEW WORLD OF PEDIATRIC SPINAL MUSCULAR ATROPHY – IMPLICATIONS OF NEWBORN SCREENING AND EFFECTIVE TREATMENT

Organizer:
Erin E. Neil, DO
University of Michigan,
C.S. Mott Children's Hospital,
Ann Arbor, MI


The famous Back Bay Neighborhood.

Practical Implications and Considerations after State-wide Initiation of SMA Newborn Screening
Erin E. Neil, DO

The Clock is Ticking: Challenges in the Timely Choice of Treatment and Implementation in the Pre-Symptomatic Patient with SMA
Richard Finkel, MD
St. Jude Children's Research Hospital, Memphis, TN

Ethical Considerations for High-cost, Complex-to-Administer Treatments in Medically Fragile Patients
Jim Dowling, MD, PhD
Hospital for Sick Children, Toronto, Ontario, Canada

1:00 PM – 2:15 PM
SEMINAR 4:
NEUROLOGIC IMPLICATIONS OF YOUTH SPORTS PARTICIPATION

Organizer:
Sean Rose, MD
Nationwide Children's Hospital, Ohio State University College of Medicine, Columbus, OH

Youth Sports for the Child Neurologist: Benefits of Sports Participation and Health Disparities
Meeryo Choe, MD
UCLA Mattel Children's Hospital, UCLA David Geffen School of Medicine, Los Angeles, CA

Concussion and Repetitive Head Impacts in Youth Contact Sports
Sean Rose, MD

Long-term Neurologic Effects of Contact Sports and Repetitive Head Impacts
Jaclyn B. Caccese, PhD
The Ohio State University College of Medicine, Columbus, OH

2:45 PM-3:15 PM
MARTHA BRIDGE DENCKLA AWARD LECTURE: DISEASE TARGETED TREATMENT TRANSLATION IN FRAGILE X SYNDROME AND NEURODEVELOPMENTAL DISABILITIES: THE FIRST CHAPTER

Supported by a grant from Kennedy Krieger Institute

Elizabeth Berry-Kravis, MD, PhD
Rush University Medical Center, Chicago, IL

3:15 PM – 5:30 PM
SYMPOSIUM III:
NEUROLOGICAL MANIFESTATIONS AND LONG-TERM SEQUELA OF PEDIATRIC COVID-19 INFECTIONS

Organizer:
Laura A. Malone, MD, PhD
Kennedy Krieger Institute, Baltimore, MD

Introduction and Example Case Presentations
Laura A. Malone, MD, PhD

Neurological Symptoms in Children with PIMS-TS: Initial Presentation and Follow-up
Yael Hacohen, MD, PhD
University College London, London, UK

Neurological Manifestations of COVID-19 Related Illness in Hospitalized Children
Ericka L. Fink, MD, MS
UPMC Children's Hospital of Pittsburgh, Pittsburgh, PA

Neuropsychiatric Presentation in Pediatric COVID-19 Patients Associated with Anti-neural Autoantibodies
Claire Johns, MD
University of California San Francisco, San Francisco, CA

4:00 PM – 5:15 PM
SEMINAR 5:
CP TO YOU IS NOT CP TO ME – STRATEGIES FOR MITIGATING PRACTICE VARIABILITY IN CEREBRAL PALSY CARE

Organizer:
Bhooma Aravamuthan, MD, DPhil
Washington University in St. Louis School of Medicine, St. Louis, MO

The Past: Historical Origins of Variability in CP Care
Young-Min Kim, MD
Loma Linda University, Loma Linda, CA

The Present: Current Sources of Variability in CP Diagnosis and Management
Bhooma Aravamuthan, MD, DPhil

The Future: Suggestions for Enhancing Cerebral Palsy Education During Residency and Beyond
Jenny Wilson, MD
Oregon Health & Science University, Portland, OR

5:00 PM – 6:30 PM
EXHIBITS & POSTERS REVIEW
(Wine & Cheese)

SESSIONS highlighted in maroon are designated for CME credit.
Agenda and amount of CME credits available are subject to change.

Friday, October 1

Room assignments: refer to Schedule at a Glance, pp 44-47

7:00 AM – 8:00 AM
EXHIBITS & POSTER REVIEW
(Continental Breakfast served)

7:00 AM – 8:00 AM
2021 CNS ARNOLD P. GOLD HUMANISM IN MEDICINE BREAKFAST

Supported by a grant from the Arnold P. Gold Foundation

AWARD PRESENTATIONS & GENERAL SESSION

8:15 AM – 8:30 AM
CHILD NEUROLOGY FOUNDATION SCIENTIFIC GRANT & AWARD ANNOUNCEMENTS

8:30 AM – 9:00 AM
PHILIP R. DODGE YOUNG INVESTIGATOR AWARD LECTURE: COMMUNICATING NEUROLOGIC PROGNOSIS: CHALLENGES AND OPPORTUNITIES

Monica Lemmon, MD
Duke University School of Medicine, Durham, NC

9:00 AM – 9:45 AM
BERNARD SACHS AWARD LECTURE: GENE THERAPY CHANGING THE OUTCOMES FOR CHILDREN WITH NEUROMUSCULAR DISEASE

Jerry Mendell, MD
Nationwide Children's Hospital, Columbus, OH

9:45 AM – 12:00 PM
SYMPOSIUM IV: PROGRESS IN CHILD NEUROLOGY THROUGH THE LENS OF AN NINDS CAREER DEVELOPMENT PROGRAM: CNCDP, PAST PRESENT AND FUTURE

Organizer:
Brad Schlaggar, MD, PhD
Kennedy Krieger Institute, Baltimore, MD

NSADA and CNCDP: Past Present and Future
Brad Schlaggar, MD, PhD
Kennedy Krieger Institute, Baltimore, MD

Working Towards Inclusion in Child Neurology Research
Erika Augustine, MD, MS
Kennedy Krieger Institute, Baltimore, MD

From NSADA to the International Pediatric Stroke Organization
Heather J. Fullerton, MD, MAS
UCSF Benioff Children's Hospital, San Francisco, CA

Recently Funded CNCDP Scholars

Translating Diagnostic Techniques Across Species to Better Understand Dystonia in Cerebral Palsy
Bhooma Aravamuthan, MD, PhD; MD, DPhil; Washington University in St. Louis, St. Louis, MO

Turning Classical Lesion Localization on its Head: How Lesion Location can be Used to Predict Patient Outcomes
Aaron Boes, MD, PhD
University of Iowa, Iowa City, IA

Decision Making for Infants with Neurologic Conditions
Monica Lemmon, MD
Duke University School of Medicine, Durham, NC

Optimizing Cognitive and Functional Outcomes Across Populations: Insights from the Neural Mechanisms of Exercise
Autumn Ivy, MD, PhD
University of California – Irvine School of Medicine, Irvine, CA

Wrap up
Brad Schlaggar, MD, PhD

12:30 PM – 1:45 PM

SEMINAR 6: MEDULLOBLASTOMA, NEW CLINICAL AND TRANSLATIONAL INSIGHTS: THE PATH FORWARD

Organizer:
Roger J. Packer, MD
Children's National Hospital, Washington, DC

Molecular Underpinnings of Medulloblastoma: Stratification and Clinical Implications
Paul A. Northcott, PhD
St. Jude Children's Research Hospital, Memphis, TN

Intrathecal Therapies for Medulloblastoma and Other Embryonal Tumors: Use of Radiolabeled Monoclonal Therapies
Kim Kramer, MD
Memorial Sloan Kettering Cancer Center, New York, NY

Results of Recently Completed Clinical Trials for Medulloblastoma and Implications for Future Studies
Roger J. Packer, MD

12:30 PM – 1:45 PM

SEMINAR 7: DISORDERS OF CONSCIOUSNESS IN CRITICALLY ILL CHILDREN: CURING COMA FOR THE DEVELOPING BRAIN

Organizer:
Mark Wainwright, MD, PhD
University of Washington School of Medicine, Seattle, WA

Neuroscience of Consciousness and Implications for Neuroprotection
Mark Wainwright, MD, PhD

Causes of Altered Consciousness and Impact on Outcome
Jessica Carpenter, MD
Children's National Hospital, Washington, DC

Functional Neuroimaging and the Diagnostic Assessment of Disorders of Consciousness
Varina Boerwinkle, MD
Barrow Neurological Institute at Phoenix Children's Hospital, Phoenix, AZ

Ethical Implications of the Pediatric Definition of Consciousness
Leon G. Epstein, MD
Northwestern University Feinberg School of Medicine, Chicago, IL

12:30 PM – 1:45 PM

SEMINAR 8: THE CRITICAL PERIOD OF MEMORY DEVELOPMENT: CONSTRUCTION, DESTRUCTION AND RECONSTRUCTION

Organizer:
Gregory L. Holmes, MD
University of Vermont Larner College of Medicine, Burlington, VT

Role of Hippocampal Oscillations During the Critical Period of Memory Development
Gregory L. Holmes, MD

Alterations of Neuronal Dynamics as a Mechanism for Cognitive Impairment in Epilepsy
Pierre-Pascal Lenck-Santini, PhD, INMED, Aix Marseille Université, INSERM, Marseille, France

Enduring Memory Deficits after Early-Life Adversity: Epigenetics, Imaging and Intervention
Tallie Z. Baram, MD, PhD
University of California Irvine, Irvine, CA

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50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

2:15 PM – 4:30 PM
SYMPOSIUM V:
DEVELOPING TREATMENTS FOR PEDIATRIC EPILEPSIES: FROM MODELS TO THE CLINIC

Organizer:
Solomon Moshé, MD
Albert Einstein College of Medicine, Bronx, NY

Treating Epilepsies with Genetic Etiology: The Tuberous Sclerosis Example
Michael Wong, MD, PhD
Washington University in St. Louis, St. Louis, MO

Somatic Mutations in Epilepsies with Cortical Malformations and Implications for Targeted Therapies
Annapurna Poduri, MD, MPH
Boston Children's Hospital, Harvard Medical School, Boston, MA

Towards a Syndrome-specific Preclinical Epilepsy Therapy Screening Pipeline for Infantile Spasms: Current State and Future Perspectives
Aristea S. Galanopoulou, MD, PhD
Albert Einstein College of Medicine, Bronx, NY

The Future of Pediatric Epilepsy Therapy Development: Biomarkers, Precision Medicine and Novel Trial Designs
Adam L. Hartman, MD
National Institute of Neurological Disorders and Stroke, NIH, Rockville, MD

2:15 PM – 4:30 PM
SYMPOSIUM VI:
THE TINY ELEPHANT IN THE ZOOM ROOM: HARNESSING A CRISIS TO RECOVER, MAINTAIN AND ENHANCE CAREER DEVELOPMENT IN CHILD NEUROLOGY

Organizer:
Keith Van Haren, MD
Stanford University School of Medicine, Palo Alto, CA

Data Talk on How COVID has Pulled Back the Curtain on Longstanding Challenges & Disparities in Caregiver Responsibilities
Keith Van Haren, MD

Challenges & Opportunities for Trainees with Caregiver Responsibilities
Yasmin Khakoo, MD
MSK Kids, Memorial Sloan Kettering Cancer Center, New York, NY

Challenges & Opportunities for Clinicians with Caregiver Responsibilities
Brenda Banwell, MD
Children's Hospital of Philadelphia, Philadelphia, PA

Challenges & Opportunities for Scientists with Caregiver Responsibilities
Nina F. Schor, MD, PhD
National Institute of Neurological Disorders and Stroke, Bethesda, MD

Q & A
Panelists:
Erika Augustine, MD, MS
Kennedy Krieger Institute, Baltimore, MD

Audrey C. Brumback, MD, PhD
Dell Medical School, The University of Texas at Austin, Austin, TX

Juliet K. Knowles, MD, PhD
Stanford University School of Medicine, Palo Alto, CA

Bradley Schlaggar, MD, PhD
Kennedy Krieger Institute, Baltimore, MD

5:00 PM – 6:15 PM
SEMINAR 9:
NEURO-HUMANITIES: NEUROLOGISTS AND NEUROLOGY IN ART, COMEDY, POETRY, AND MUSIC (WINE & CHEESE)

Organizer:
Phillip Pearl MD
Harvard Medical School and Berklee Institute of Music, Boston, MA

Comedy in Neurology, and Vice Versa
Joseph D. Pinter, MD
Oregon Health & Science University, Portland, OR

Neurological Symptoms Expressed in Art
Carl E. Stafstrom, MD, PhD
The Johns Hopkins University School of Medicine, Baltimore, MD

Neurologist as Poet and Neurology in Poetry
Nina F. Schor, MD, PhD
National Institute of Neurological Disorders and Stroke, Bethesda, MD

Neurological Problems of Musical Masters
Phillip Pearl MD

7:00 PM – 9:00 PM
GALA RECEPTION

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

SESSIONS highlighted in maroon are designated for CME credit.
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CREATING HOPE THROUGH INNOVATION

At Eisai, everything we do is guided by a simple principle: patients and their families come first. We spend time with them. We listen and we learn about their lives, their desires and their greatest needs. We call this *human health care* or *hhc*, giving first thoughts to patients and their families and helping increase the benefits health care provides.

Our *hhc* mission is what drives us to discover innovative solutions and therapies that help address unmet needs within the communities that we seek to serve.

Eisai is proud to support the Society of Nuclear Medicine and Molecular Imaging.

hhc
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PTC THERAPEUTICS™

It is now more important than ever
to find the cause of your patient's hypotonia.

COULD IT BE AADC DEFICIENCY?

Visit **PTC Therapeutics at booth 416** to learn more about Aromatic L-amino Acid Decarboxylase (AADC) Deficiency.

Saturday, October 2

Room assignments: refer to Schedule at a Glance, pp 44-47

50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
BOSTON • MASSACHUSETTS

8:45 AM-9:30 AM
HOWER AWARD LECTURE: MENTORS AND PROTEGES: STANDING ON THE SHOULDERS OF GIANTS AND FOLLOWING FOOTSTEPS INTO THE FUTURE

Supported by a grant from the Hower Family Foundation

Jonathan W. Mink, MD, PhD
University of Rochester,
Rochester, NY

9:45 AM – 12:00 PM
SYMPOSIUM VII: ARE WE POISED FOR A THERAPEUTIC REVOLUTION IN CHILD NEUROLOGY?

Organizer:
Louis T. Dang, MD, PhD
Michigan Medicine,
Ann Arbor, MI

Co-Organizer:
Renée A. Shellhaas, MD, MS
Michigan Medicine,
Ann Arbor, MI

Introduction
Renée A. Shellhaas, MD, MS

Epigenetics and Brain Plasticity: Lessons from Rett Syndrome and other MECP2 Disorders
Huda Y. Zoghbi, MD
Howard Hughes Medical Institute,
Baylor College of Medicine,
Houston, TX

Base Editing and Prime Editing: Precision Gene Editing without Double-strand DNA Breaks
David Liu, PhD
Broad Institute of MIT and
Harvard; Cambridge, MA

Individualized Therapies for Orphan Neurogenetic Diseases
Tim Yu, MD, PhD
Boston Children's Hospital,
Boston, MA

Clinical Trials for Gene-directed Therapies
Erika Augustine, MD, MS
Kennedy Krieger Institute,
Baltimore, MD

Summary and Looking to the Future
Louis T. Dang, MD, PhD

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Agenda and amount of CME credits available are subject to change.

1:00 PM – 5:00 PM
CNS CLINICAL RESEARCH ANNUAL WORKSHOP: 2021 – PEDIATRIC NEUROLOGY CLINICAL TRIALS – INTRODUCTION TO THE SERIES

Organizer:
Ariel Maia Lyons-Warren, MD, PhD
Baylor College of Medicine, Houston, TX

Co-Organizers:
Gabrielle deVeber MD, FRCP(C)
University of Toronto, Hospital for Sick Children, Toronto, Ontario, CA

Josh Bonkowsky, MD, PhD
University of Utah School of Medicine, Primary Children's Hospital, Salt Lake City, Utah

Welcome
Ariel Maia Lyons-Warren, MD, PhD

The Importance of Clinical Research and How to Get Involved
Adam L. Hartman, MD
National Institute of Neurological Disorders and Stroke, NIH, Rockville, MD

Identifying Current Gaps in Research
Renée A. Shellhaas, MD, MS
Michigan Medicine, Ann Arbor, MI

Breakout Session

Coffee Break

Protected Time: How to Break the Catch 22 Cycle
Kristin P. Guilliams MD, MSCI
Washington University School of Medicine, St. Louis, MO

How to Design Clinic-Based Enrollment Studies
Shafali Jeste, MD, FAAN
Children's Hospital Los Angeles, University of Southern California, Los Angeles, CA

Approaches to Funding: Beyond the NIH
Erika Augustine, MD, MS
Kennedy Krieger Institute, Baltimore, MD

Panel Discussion

Q&A

SESSIONS highlighted in maroon are designated for CME credit.
Agenda and amount of CME credits available are subject to change.

The ship USS Constitution at the end of Boston's Freedom Trail as part of museum at the Boston National Historical Park.

JOIN US FOR A SATELLITE
CME LUNCH SEMINAR

PRACTICAL CLINICAL MANAGEMENT OF DRAVET SYNDROME

RECONSIDERING THE STANDARD OF CARE

THURSDAY, SEPTEMBER 30, 2021
NOON – 2:00 PM
Hynes Convention Center
Meeting Room 312, Third Level

PROGRAM CHAIR

Elizabeth A. Thiele, MD, PhD
Professor of Neurology
Harvard Medical School
Director, Pediatric Epilepsy Program
Director, Herscot Center for
Tuberous Sclerosis Complex
Massachusetts General Hospital
Boston, Massachusetts

PRE-REGISTER AT:
www.millermeded.com/dravet
Pre-registration does not guarantee seating.
On-site registration may be available, space permitting.

This activity has been approved for *AMA PRA Category 1 Credit*(s)™.

Jointly provided by Postgraduate Institute for Medicine and Miller Medical Communications, LLC.

PIM Postgraduate Institute for Medicine

MMC Miller Medical Communications, LLC.

This live activity is supported by an independent educational grant from Zogenix, Inc.

Satellite CME Seminar staged in conjunction with the 50th Annual Meeting of the Child Neurology Society. A staging fee was paid to the CNS to present this session. CNS is not responsible for, nor does it endorse the product or content presented.

Industry-Sponsored Satellite Sessions

Industry Sponsored Satellite Sessions are independently staged and accredited or non-accredited educational or product theater events. A gateway fee making them accessible to attendees is paid by the presenters.

LIVE IN BOSTON:

Advancing the Care of a Pediatric Neurotransmitter Disorder: Experience with an Investigational Intraputaminal Gene Replacement Therapy for the Treatment of AADC Deficiency

Thursday, September 30, 7:00 AM - 8:15 AM, Rm 312

Please join our expert faculty for an educational symposium at the 50th Child Neurology Society (CNS) Annual Meeting as they:

- Provide an overview of aromatic L-amino acid decarboxylase (AADC) deficiency and the eladocagene exuparvovec construct
- Review clinical experience with treatment options in development for AADC deficiency
- Provide rationale for the putamen as a target delivery site for central nervous system gene therapy
- Discuss the real-world experience of treating patients with investigational eladocagene exuparvovec

Dr. Ashutosh Kumar
Assistant Professor, Pediatrics and Neurology, Penn State Health Milton S. Hershey Medical Center

Dr. Daniel J. Curry
Director, Functional Neurosurgery & Epilepsy Surgery, Texas Children's Hospital

Prof. Agathe Roubertie, Department of Pediatric Neurology, Hôpital Gui de Chauliac, Montpellier, France

Dr. Matthew Klein, Chair, Chief Development Officer, PTC Therapeutics

Pre-register: https://web.cvent.com/event/df74d1be-e6db-4d59-9463-5889eedf57ae/regProcessStep1?locale=en-US&tm=wyyg03xGEf5WixXG2AlbAMRpQXO-VmEnQv2X9P7T0Nk

Mariya Elterman, melterman@ptcbio.com

Financial support by PTC Therapeutics

LIVE IN BOSTON:

Practical Clinical Management of Dravet Syndrome: Reconsidering the Standard of Care

Thursday, September 30, 12:00 PM - 2:00 PM, Rm 312

Dravet syndrome (DS) is a debilitating, epileptic encephalopathy of childhood for which few treatment options were available in the United States prior to 2018. Because, until recently, treatment options were limited, most patients retained a high seizure burden even with polypharmacy, with little positive impact on non-seizure-related outcomes. Novel treatment options, however, provide an unprecedented level of seizure control with prolonged intervals of seizure freedom and ≥75% seizure reduction in as many as 50% of patients, with evidence emerging that the robust reduction in seizure frequency also improves cognitive outcomes. Future investigations will show if treatment with novel agents can translate into DS patients having a greater likelihood of better long-term neurodevelopmental outcomes. This symposium will review DS and its clinical diagnosis and management, with a practical focus on rational therapy choices that optimize patient management and long-term outcomes.

AGENDA

Noon – 12:30 PM – On-site Check-in and Lunch

12:30 PM – 12:35 PM – Introduction
Elizabeth A. Thiele, MD, PhD (Program Chair)
Harvard Medical School
Massachusetts General Hospital

12:35 PM – 12:50 PM – Dravet Syndrome: Clinical Updates and Therapeutic Options
Elizabeth A. Thiele, MD, PhD

12:50 PM – 1:15 PM – Seizure Management: From Clinical Trials to Clinical Care
Elaine C. Wirrell, MD, FRCPC
Mayo Clinic

1:15 PM – 1:35 PM – Secondary Outcomes: Real-World Perspectives on Long-Term Outcomes and Clinical Expectations
Joseph E. Sullivan, MD
University of California, San Francisco (UCSF)
UCSF Benioff Children's Hospital
Pediatric Epilepsy Center of Excellence

1:35 PM – 2:00 PM – Q&A

Pre-register: www.millermeded.com/dravet
Kerri Leonard, kerri.leonard@millermeded.com

Financial support by Zogenix

LIVE IN BOSTON:

Looking Back to Move Forward: Demonstrating the Potential Benefits of Early Treatment with SPINRAZA

Friday, October 1, 7:00 AM - 8:15 AM, Rm 312

Over the past 5 years, the spinal muscular atrophy (SMA) field has been transformed by the approval of disease-modifying therapy, resulting in evolving patient phenotypes and treatment expectations. Pull up an armchair and join us for an intimate fireside chat as our experts, Drs Crystal Proud and Julie Parsons, lead us on a journey through time exploring different eras of SMA treatment including the era prior to treatment availability, the early years following approval of SPINRAZA® (nusinersen), and SMA today.

Crystal Proud, MD
Neuromuscular Neurologist
Managing SMA patients since 2014
Children's Hospital of the King's Daughters
Norfolk, VA

Julie Parsons, MD
Pediatric Neurologist
Managing SMA patients since 2007
University of Colorado School of Medicine and
Children's Hospital Colorado
Aurora, CO

Kelly Fay, kelly.fay@biogen.com

Financial support by Biogen

VIRTUAL:

Industry Sponsored Product Theater Spinal Muscular Atrophy (Novartis Gene Therapies)

Tuesday, September 28, 1:00 PM EDT

Monday, October 4, 1:00 PM EDT

Dr. Sandra Reyna, VP of Global Medical Affairs and is the Head of Therapeutic Area at Novartis Gene Therapies.

Catherine Glaub, SMA Community Member, and a parent of a child with SMA

http://towermedicalmedia.com/livestream

Financial support by Novartis

Session links provided on virtual platform and on CNS website 2021 Annual Meeting page:
https://www.childneurologysociety.org/colleagues/network/cns-annual-meeting/

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

Industry-Sponsored Seminars

VIRTUAL:

A Targeted Approach to Taming NF1-Associated Tumors: Navigating the Child Neurologist's Role in an Evolving Treatment Calculus

Monday, October 4, 7:00 PM EDT

This educational activity is targeted to pediatric neurologists, neuro-oncologists, neurosurgeons, and other members of the multidisciplinary NF1 care team attending the 2021 Child Neurology Society (CNS) Annual Meeting. Designed and developed to provide an interactive overview of novel and emerging data, as well as establish a foundational context of NF1 disease state complexity and intractability, this activity will begin by reviewing revised diagnostic criteria and hallmark aspects of NF1 natural history and clinical presentation in pediatric patients, and describing the genetic etiologies and multi-system pathophysiology that have historically made NF1-associated tumors so difficult to treat. Supported by a dynamic case-based approach intended to encourage audience engagement, attendees will gain insights from key opinion leaders regarding the pivotal shortcomings of traditional NF1 management modalities and the new horizons that have accompanied the emergence of targeted medical therapies, most notably MEK inhibitors. This discussion will be supported by a detailed appraisal of clinical trial data, treatment recommendations, and approved indications for targeted therapies in NF1. Finally, top-level child neurology experts will guide attendees through a case-driven, real-world exploration of the expanding role of the pediatric neurologist as the NF1 paradigm advances into the era of MEK inhibition.

Verena Staedtke, MD, PhD (Activity Chair)
Director of Pediatric Neurofibromatosis
The Johns Hopkins Comprehensive Neurofibromatosis Center
Associate Professor of Neurology
Johns Hopkins University
Baltimore, MD

Michael J. Fisher, MD
The Children's Hospital of Philadelphia
University of Pennsylvania Perelman School of Medicine
Philadelphia, PA

Nicole Ullrich, MD, PhD
Associate Professor of Neurology
Harvard Medical School
Boston, MA

https://www.ceconcepts.com/NF1-CNS

Financial support by Astra Zeneca

VIRTUAL:

Explore the Science for an Approved SMA Treatment and Hear From People Living with Spinal Muscular Atrophy

Thursday, October 21, 3:00 PM EDT

Spinal muscular atrophy (SMA) is a progressive, genetic neuromuscular disease with a broad spectrum of severity in children and adults. Much progress has been made in the understanding of SMA and, today, people living with Type 1, 2, or 3 SMA have options for disease-modifying therapies. In this symposium, a clinician speaker will present the efficacy and safety of an approved SMA treatment and will interview members of the SMA community who have made this treatment part of their SMA management plan. The community speakers will share their journeys from diagnosis onward, including discussions around treatment decisions, assessment of progress, and everyday life with SMA.

Elizabeth Kichula, MD, PhD
Pediatric Neurologist
Attending Physician
Children's Hospital of Philadelphia
Philadelphia, PA

https://genentechrsvp.com/registrations/search?program_code=CM41484

Financial support by Genentech

Session links provided on virtual platform and on CNS website 2021 Annual Meeting page:
https://www.childneurologysociety.org/colleagues/network/cns-annual-meeting/

Evrysdi
in action

JOIN US FOR

a virtual symposium exploring the **science behind Evrysdi**

Thursday, October 21
3:00 PM ET

Visit us at **Booth #415**
Learn more at **Evrysdi-hcp.com**

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TAYSHA GENE THERAPIES

WHO WE ARE

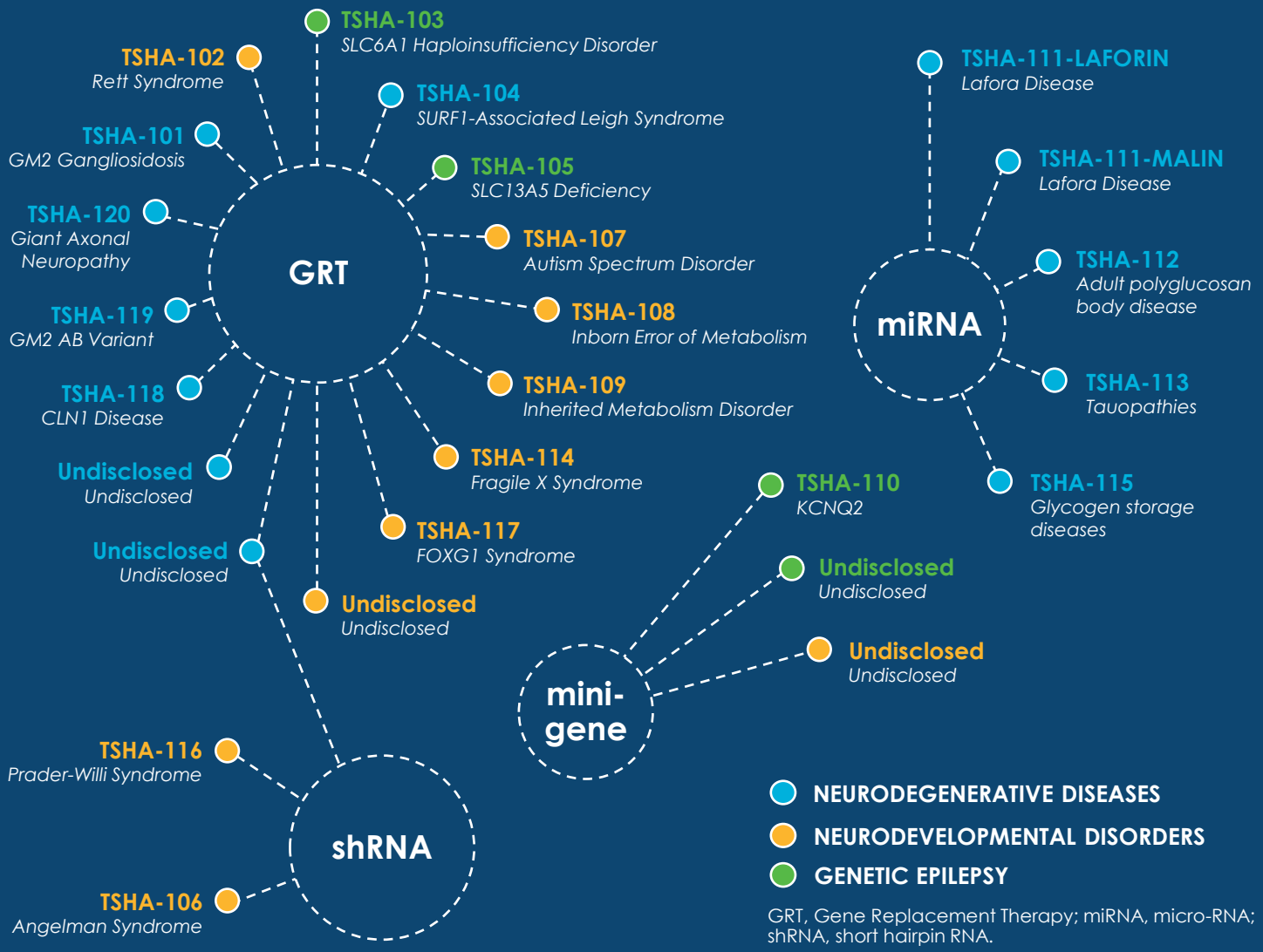
Taysha Gene Therapies is building upon advancements in AAV9-based gene therapies utilized to deliver transformational benefits to patients suffering from devastating diseases, in order to develop treatments for monogenic central nervous system (CNS) diseases. In partnership with UT Southwestern, Taysha is advancing an extensive pipeline of therapies targeting the underlying biology for each specific indication.

WHAT WE DO

Developing next-generation technologies using AAV9-based gene therapy approaches that optimize or overcome limitations of the technology platform, providing new opportunities in the development of treatments of patients afflicted with these diseases.

OUR APPROACH

Intrathecal administration of an AAV9 vector delivers therapeutic genes engineered to replace a mutated gene or regulate transgene expression. Direct intra-cerebrospinal fluid delivery of the gene therapies has the potential to facilitate broad biodistribution and cell transduction within the CNS.



GRT, Gene Replacement Therapy; miRNA, micro-RNA; shRNA, short hairpin RNA.

Contact us at : medinfo@tayshagtx.com
https://tayshagtx.com/

50TH ANNUAL MEETING
CNS
SEPT 29-OCT 2, 2021
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The Child Neurology Society thanks the following partners for their generous financial support.

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Boston Children's Hospital
Where the world comes for answers

Child Neurology FOUNDATION
Creating a Community of Support

Genentech
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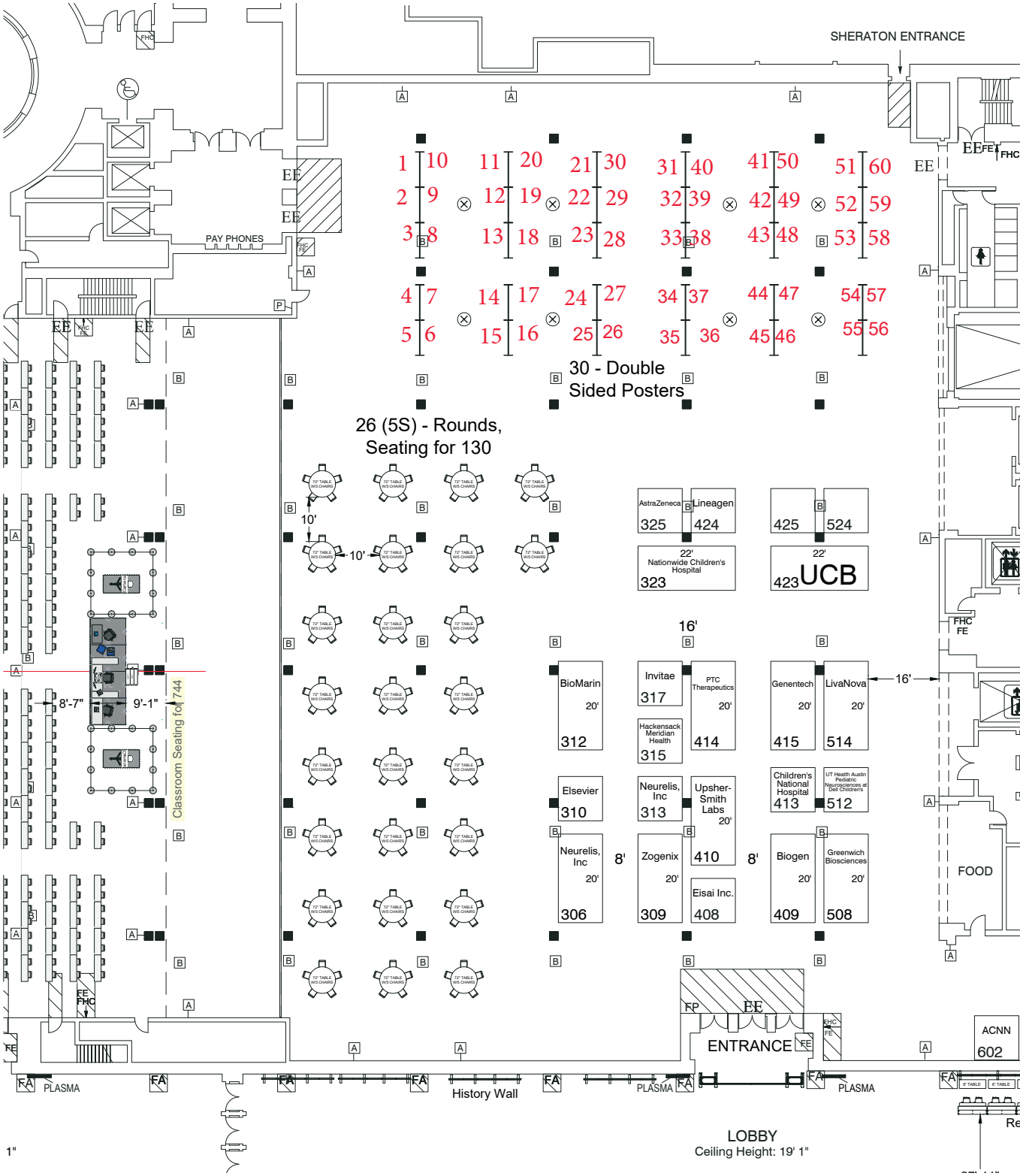
TAYSHA GENE THERAPIES

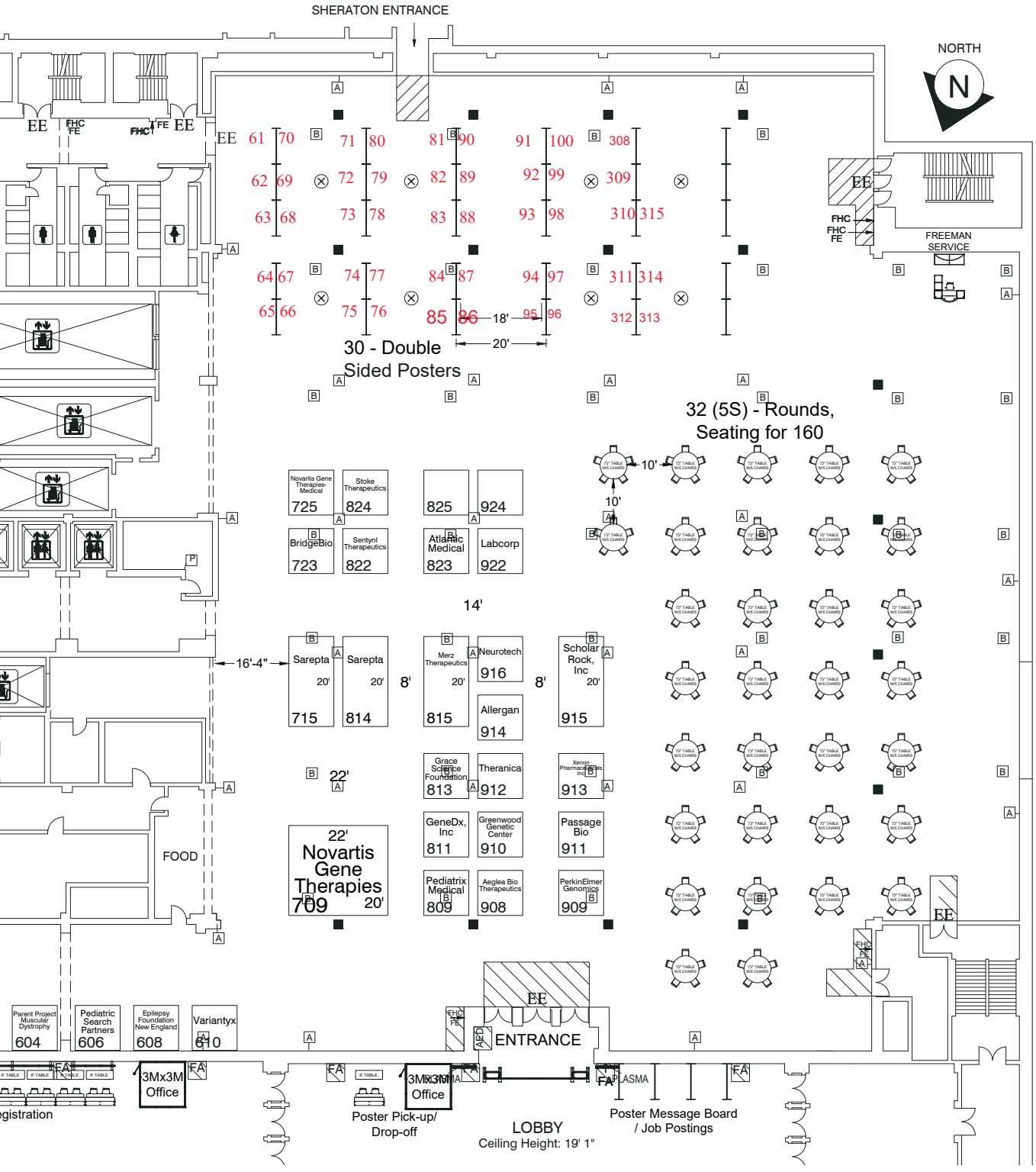
Thanks to the following for their support of CNS Award Lectures (Hower and Denckla)

Akron Children's Hospital

Kennedy Krieger Institute

Hynes Convention Center Exhibit Halls C&D




SHERATON ENTRANCE
NORTH
N
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30 - Double Sided Posters
32 (5S) - Rounds, Seating for 160
10'
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16'-4"
8'
22'
20'
18'
Novartis Gene Therapies-Medical 725
Stoke Therapeutics 824
825
924
BridgeBio 723
Sentynl Therapeutics 822
Atlantic Medical 823
Labcorp 922
Sarepta 715
Sarepta 814
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Xenon Pharmaceuticals Inc 913
GeneDx, Inc 811
Greenwood Genetic Center 910
Passage Bio 911
Pediatrix Medical 809
Aeglea Bio Therapeutics 908
PerkinElmer Genomics 909
22' Novartis Gene Therapies 709 20'
FOOD
Parent Project Muscular Dystrophy 604
Pediatric Search Partners 606
Epilepsy Foundation New England 608
Variantyx 610
ENTRANCE
3Mx3M Office
Poster Pick-up/ Drop-off
LOBBY
Ceiling Height: 19' 1"
PLASMA
Poster Message Board / Job Postings

Exhibitors

Aeglea Bio Therapeutics (#908)

At Aeglea, we believe that every patient deserves a chance at a better life. We are committed to helping people with rare and devastating metabolic diseases who have limited treatment options because having a rare disease doesn't mean that you are in this fight alone.

Allergan, an AbbVie company (#914)

AbbVie's mission is to discover and deliver innovative medicines that solve serious health issues today and address the medical challenges of tomorrow. We strive to have a remarkable impact on people's lives across several key therapeutic areas: immunology, oncology, neuroscience, eye care, virology, women's health and gastroenterology, in addition to products and services across its Allergan Aesthetics portfolio.

Association of Child Neurology Nurses (ACNN) (#602)

The Association of Child Neurology Nurses is an international nonprofit organization of nurses and other health care professionals caring for children with neurological conditions. The ACNN provides educational opportunities at national and regional conferences, nursing excellence awards, research support, newsletters, and online membership contacts for networking. Additional information and how to join can be found at www.neurologynurses.org.

Astellas Gene Therapies Virtual

Astellas Gene Therapies is an Astellas Center of Excellence developing genetic medicines with the potential to deliver transformative value for patients. Based on an innovative scientific approach and industry leading internal manufacturing capability and expertise, we are currently exploring three gene therapy modalities: gene replacement, exon skipping gene therapy, and vectorized RNA knockdown.

BRONZE SPONSOR

AstraZeneca (#325)

AstraZeneca is a global, science-led biopharmaceutical company that focuses on the discovery, development and commercialization of prescription medicines in Oncology, Rare Diseases, and BioPharmaceuticals. Based in Cambridge, UK, AstraZeneca operates in over 100 countries, and its innovative medicines are used by millions of patients worldwide. Please visit astrazeneca-us.com and follow the Company on Twitter @AstraZenecaUS.

AstraZeneca

Atlantic Medical Group (#823)

Atlantic Health System, headquartered in Morristown, N.J., is an integrated health care system with a workforce of 18,000 members dedicated to building healthier communities. It includes 350 care sites and six hospitals. Our flagship hospital, Morristown Medical Center, is the #1 Hospital in NJ as ranked by US News & World Report, and is also home to Goryeb Children's Hospital.

SILVER SPONSOR

Biogen (#409) Boston & Virtual

At Biogen, our mission is clear: we are pioneers in neuroscience. Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological and neurodegenerative diseases as well as related therapeutic adjacencies.

Biogen

BioMarin Pharmaceutical, Inc. (#312)

BioMarin is a world leader in developing and commercializing innovative therapies for rare diseases driven by genetic causes. With a 20-year history, BioMarin remains steadfast to its original mission – to bring new treatments to market that will make a big impact on small patient populations. Visit www.biomarin.com to learn more.

BridgeBio (#723)

BridgeBio Pharma and affiliate Origin Biosciences, are dedicated to commercializing Nulibry® (fosdenopterin) for injection, an approved treatment for molybdenum cofactor deficiency (MoCD) Type A. We strive to deliver treatment to patients as quickly as possible because time is of the essence when facing the damage caused by this devastating disorder.

Children's National Hospital (#413)

Children's National Hospital, based in Washington, D.C., celebrates 150 years of pediatric care, research and commitment to community. Children's National is among the nation's top 10 children's hospitals ranking No. 1 for newborn care for the fifth straight year. In 2021, the Children's National Research & Innovation Campus opened, the first in the nation dedicated to pediatric research.

Cortica Virtual

Cortica is a pediatric healthcare organization focused on children with a wide range of neurodevelopmental differences. We aim to advance the standard of care, improve the family experience, achieve excellent patient outcomes, and unveil additional insights about this under-served population. All our Care Centers are led by pediatric neurologists and incorporate child neurology with occupational therapy, speech therapy, behavioral therapy, physical therapy, music therapy and family therapy.

GOLD SPONSOR

Eisai Inc. (#408) Boston & Virtual

As the U.S. pharmaceutical subsidiary of Tokyo-based Eisai Co., Ltd., we are a fully integrated pharmaceutical business with discovery, clinical, and marketing capabilities. Our key areas of focus include oncology and neurology (dementia-related diseases and neurodegenerative diseases). To learn more about Eisai Inc., please visit us at www.eisai.com/US and follow us on Twitter and LinkedIn.

Eisai

Elsevier, Inc. (#310)

Elsevier is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, and deliver better care.

Epilepsy Foundation New England (#608)

Epilepsy Foundation New England provides help to people and families affected by epilepsy in MA, NH, ME, and RI. Services include hospital, community based, and virtual Epilepsy Resource Rooms, care management, support groups, camps, financial assistance, advocacy, educational programs, & more. Come learn about the free supports available to patients.

GeneDx Inc. (#811)

GeneDx, Inc. is a global leader in genomics that provides genetic testing to patients and their families. Led by its world-renowned whole exome sequencing program, GeneDx has an acknowledged expertise in rare and ultra-rare genetic disorders, as well as one of the broadest menus of sequencing services available among commercial laboratories.

BRONZE SPONSOR

Genentech (#415)

For more than 40 years, we've been following the science, seeking solutions to unmet medical needs. As a proud member of the Roche Group, we make medicines to treat patients with serious medical conditions. We are headquartered in South San Francisco, California.

Genentech
A Member of the Roche Group

Grace Science Foundation (#813)

Grace Science Foundation (GSF) is a research and patient advocacy organization. GSF sponsors 15 centers worldwide to understand and treat NGLY1 Deficiency, a rare multisystemic disorder. A gene therapy trial is scheduled for late 2022. The Foundation also works to identify patients and develop a global community for families.

GOLD SPONSOR

Greenwich Biosciences (#508)

Boston & Virtual

Greenwich Biosciences, now part of Jazz Pharmaceuticals, is focused on discovering, developing, and commercializing novel therapeutics from its proprietary cannabinoid product platform. It is our passion and purpose to continually seek solutions that transform the lives of those living with rare and severe neurological diseases.

For additional information, please visit www.GreenwichBiosciences.com.

For more information about our product, please visit www.GBmedicine.com.

GREENWICH™ BIOSCIENCES

Greenwood Genetic Center (#910)

The Greenwood Genetic Center is a nonprofit institute organized to provide clinical genetic services, diagnostic laboratory testing, educational programs and resources, and research in the field of medical genetics.

Hackensack Meridian Health (#315)

Hackensack Meridian Health is a leading not-for-profit health care organization that is the largest, most comprehensive and truly integrated health care network in New Jersey, offering a complete range of medical services, innovative research and life-enhancing care aiming to serve as a national model for changing and simplifying healthcare delivery through partnerships with innovative companies and focusing on quality and safety.

Exhibitors

Invitae (#317)

Invitae's mission is to bring comprehensive genetic information into mainstream medical practice to improve the quality of healthcare for billions of people. Our goal is to aggregate the world's genetic tests into a single service with higher quality, faster turnaround time and lower prices. Visit www.invitae.com.

Labcorp (#922)

Labcorp is a leading global life sciences company that provides vital information to help doctors, hospitals, pharmaceutical companies, researchers and patients make clear and confident decisions. Through our unparalleled diagnostics and drug development capabilities, we provide insights and accelerate innovations to improve health and improve lives. Learn more about and Labcorp at www.Labcorp.com or follow us on LinkedIn and Twitter @Labcorp.

Lineagen (#424)

Lineagen, a Bionano Genomics Company, is a provider of genetic testing services focused on serving individuals with neurodevelopmental disorders. Lineagen helps make genetic testing accessible to both patients and providers by combining simple non-invasive sampling and advanced testing technology with dedicated service and support.

LivaNova (#514)

As pioneers of the VNS (Vagus Nerve Stimulation) Therapy® system, we continue to advance medical device solutions for people affected by drug-resistant epilepsy. We strive to help where it really counts, where it truly matters the most. Sharp, responsive and effective – at LivaNova we serve health and improve lives. Day by day. Life by life.

Marinus Pharmaceuticals Virtual

Marinus Pharmaceuticals is a clinical stage biopharmaceutical company committed to improving the lives of patients affected by rare seizure disorders. At Marinus, we are dedicated to the development of investigational ganaxolone, for the potential treatment of pediatric and adult patients with chronic and acute seizure disorders.

Merz Therapeutics (#815)

Merz Therapeutics addresses the unique needs of people who suffer from movement disorders, neurological conditions, and other health conditions that severely impact patients' quality of life. Our patient-centric approach, cutting-edge research and development efforts, and scientific medical affairs resources continue the advancement of new treatment standards, including botulinum toxi.

National Institute of Neurological Disorders and Stroke (NINDS) Virtual

The National Institute of Neurological Disorders and Stroke (NINDS) (www.ninds.nih.gov), part of the National Institutes of Health (NIH), provides information about research funding and free publications for patients and their families on neurological disorders. Home of the free Migraine Trainer™ app: https://www.ninds.nih.gov/sites/default/files/ninds_migraine_trainer_flyer_508c.pdfDisorder information: https://www.ninds.nih.gov/Disorders. NINDS publications catalog: https://catalog.ninds.nih.gov/.

Nationwide Children's Hospital (#323)

Nationwide Children's is ranked among the six best children's hospitals for Neurology and Neurosurgery by US News. Unique areas of focus include stroke, intracranial hypertension, spinal muscular atrophy and muscular dystrophy – including groundbreaking clinical and translational research. We are also top 10 in NIH funding among freestanding children's hospitals.

Neurelis, Inc. (#306, 313)

Boston & Virtual

Neurelis, Inc. is an innovation-driven neuroscience company focused on the development and commercialization of product candidates and innovative delivery technologies for the broader central nervous system (CNS), including epilepsy and psychiatry. In 2020, Neurelis reached a milestone in patient care with its first FDA-approved treatment. For information, please visit http://www.neurelis.com.

Neurotech, LLC (#916)

Accredited by the Joint Commission, Neurotech, LLC specializes in EEG services including in-home, long-term, and continuous EEG monitoring. Our EEG monitoring services improve patients' comfort and provides a cost-effective alternative to a hospital stay. Neurotech cEEG Partners, LLC provides hospitals with continuous EEG monitoring in the ICU and EMU.

GOLD SPONSOR

Novartis Gene Therapies (#709) Boston & Virtual

Novartis Gene Therapies, Inc. (formerly AveXis) is dedicated to developing and commercializing gene therapies for patients and families devastated by rare and life-threatening neurologic genetic diseases. Our initial gene therapy for spinal muscular atrophy (SMA) has been approved in more than 40 countries.

NOVARTIS

Novartis Gene Therapies – Medical (#725)

AveXis is now Novartis Gene Therapies. Novartis Gene Therapies is dedicated to developing and commercializing gene therapies for patients and families devastated by rare and life-threatening neurological genetic diseases.

Parent Project Muscular Dystrophy (#604)

Parent Project Muscular Dystrophy fights to end Duchenne. We accelerate research, raise our voices to impact policy, demand optimal care for every family, and strive to ensure access to approved therapies. Our Decode Duchenne program provides free genetic testing (diagnostic and carrier) for families living in the US or Canada.

Passage Bio (#911)

At Passage Bio, we are on a mission to provide life-transforming genetic medicines for patients with CNS diseases that replace their suffering with boundless possibility, all while building lasting relationships with the communities we serve. More information is available at www.passagebio.com.

Pediatric Search Partners (#606)

Pediatric Search Partners is a boutique search firm focused solely on pediatrics, pediatric subspecialties, and physician leaders within children's hospitals and healthcare organizations. With more than 75 years of combined experience, we deliver a proven track record of joining pediatric physicians and leaders with the hospitals and practices where they can fulfill their goals and dreams. We take care of those who take care of kids.

Pediatrix Medical Group (#809)

Pediatrix Medical Group, a part of the Mednax family, is a provider of maternal-fetal, newborn and pediatric subspecialty services. Starting as a single neonatology practice in 1979, we have evolved into a multi-specialty medical group – capable of delivering a women's and children's continuum of care – meeting the needs of our patients and hospital partners.

PerkinElmer Genomics (#909)

PerkinElmer Genomics is a state-of-the-art biochemical and molecular genetics laboratory that provides newborn screening and genomic testing services around the world. With over 8 million newborns screened since 1994, our laboratory pairs decades of newborn screening experience with a leading-edge clinical genomics program to offer one of the world's most comprehensive programs for detecting clinically significant genomic changes.

SILVER SPONSOR

PTC Therapeutics Inc. (#414)

Boston & Virtual

PTC is a science-driven, global biopharmaceutical company focused on the discovery, development and commercialization of clinically differentiated medicines that provide benefits to patients with rare disorders. Our mission is to provide access to best-in-class treatments for patients who have an unmet medical need. To learn more, please visit www.ptcbio.com.

PTC THERAPEUTICS™

Saint Francis Health System (#524)

Saint Francis Health System is a Catholic, not-for-profit health system wholly governed and operated in Tulsa, Oklahoma. The Hospital is a 1,112-bed tertiary center, which includes the region's only children's hospital and level IV neonatal intensive care unit, a 168-bed heart hospital and Tulsa's leading trauma and emergency center.

Sanford Health (#825)

Sanford Health, one of the largest health systems in the United States, is dedicated to the integrated delivery of health care, genomic medicine, senior care and services, global clinics, research and affordable insurance. The organization includes 46 hospitals, 1,400 physicians and more than 200 Good Samaritan Society senior care locations in 26 states and 10 countries.

Sarepta Therapeutics (#715, 814)

At Sarepta, we are working with urgency to develop breakthrough therapies to treat genetic diseases. Currently, we have more than 40 investigational therapies in various stages of development—many already in late-stage clinical trials. For more information, please visit our website at https://www.sarepta.com/ or contact mailto:medinfo@sarepta.com.

Scholar Rock, Inc. (#915)

Boston & Virtual

Scholar Rock, Inc. is a clinical stage biopharmaceutical company focused on discovery and development of innovative medicines for the treatment of serious diseases. Please join us at our booth or virtually at www.scholarrock.com to learn more about Scholar Rock, our pipeline and the importance of myostatin in Spinal Muscular Atrophy.

Sentynl Therapeutics (#822)

Menkes disease is a rare X-linked recessive disorder caused by mutations in the copper transport gene, ATP7A. If untreated, many patients die before the age of three. Currently, there is no FDA-approved treatment for Menkes disease.

Stoke Therapeutics (#824)

Stoke Therapeutics is a biotechnology company dedicated to addressing the underlying cause of severe diseases by upregulating protein expression with RNA-based medicines. Stoke's proprietary TANGO (Targeted Augmentation of Nuclear Gene Output) approach uses antisense oligonucleotides to selectively increase protein levels. Our medicines have the potential to be disease-modifying therapies to address the genetic causes of diseases.

Theranica USA (#912)

Theranica develops non-invasive, drug-free, personalized wearable therapeutic products for the treatment of migraine, ages 12 and up, by integrating the latest neuroscience research with notable technological expertise. Theranica's smartphone-controlled prescription migraine device, Nerivio®, was recognized in TIME Magazine's 2019 annual list of the 100 Best Inventions.

Tris Pharma (#425)

Tris Pharma is a New Jersey-based specialty pharmaceutical company focused on the development and commercialization of innovative medicines that address unmet patient needs. Tris has used its innovative LiquiXR technology to develop a portfolio of differentiated solid and liquid ADHD products, which it markets in the United States. For more information, please visit www.trispharma.com.

UCB, Inc. (#423)

At UCB, we come together everyday laser-focused on a simple question: How will this create value for people living with severe diseases? We are a global biopharmaceutical company committed to innovation to improve the lives of people with neurological and immunological diseases, finding solutions to meet their unique needs.

Upsher-Smith Laboratories (#410)

Upsher-Smith Laboratories, LLC is a trusted U.S. pharmaceutical company. We offer a suite of branded central nervous system (CNS) medications to help patients living with migraine headaches and seizure disorders. For more information, visit www.upsher-smith.com.

UT Health Austin Pediatric Neurosciences at Dell Children's (#512)

UT Health Austin Pediatric Neurosciences at Dell Children's diagnoses, treats, and manages the care of children and adolescents with medical conditions of the central nervous system, including epilepsy, cerebral palsy, neuromuscular diseases, congenital abnormalities, movement disorders, headaches, genetic conditions, neurodevelopmental disorders, brain tumors, and acquired brain injuries.

Variantyx (#610)

Variantyx uses a whole genome sequencing platform to provide the most comprehensive and flexible genomic testing available, overcoming the limitations of traditional technologies. Using a single patient sample, followed by sequencing of the entire nuclear and mitochondrial DNA, our Genomic Unity testing provides analysis of small sequence changes, copy number variants, mitochondrial small sequence changes and deletions, and short tandem repeat expansions for more than 25 genes.

Xenon Pharmaceuticals Inc. (#913)

Xenon Pharmaceuticals (NASDAQ:XENE) is a clinical stage biopharmaceutical company committed to developing innovative therapeutics to improve the lives of patients with neurological disorders. We are advancing a novel product pipeline of neurology therapies to address high unmet medical needs, with a focus on epilepsy. For more information, please visit www.xenon-pharma.com.

SILVER SPONSOR

Zogenix (#309) Boston & Virtual

Zogenix is a global biopharmaceutical company committed to developing transformative therapies to improve the lives of patients and their families living with rare diseases.

ZOGENIX

50TH CNS ANNUAL MEETING
PAST•PRESENT•FUTURE

2021 CNS Annual Meeting Registration

This is NOT a registration form to fill out and return. ALL registrations will be on-line with link posted on CNS website and sent to members via *eConnections*.

REGULAR REGISTRATION: SEPTEMBER 1 - OCTOBER 3

	On Site	Virtual	Clinical Investigator Boot Camp	CNF Fee	Humanism Breakfast	Legacy Luncheon	Book Pickup On site	Book Shipped To You	eBook	TOTAL
			Capacity: 80		Capacity: 100	Capacity: 600				
Active Member	☐ $750	☐ $750	☐ $100	☐ $100	☐ $100	☐ $100	☐ $100	☐ $125	☐ $100	
Emeritus	☐ $350	☐ $350		☐ $50	☐ $50	☐ $50	☐ $100	☐ $125	☐ $100	
Junior	☐ $350	☐ $350	☐ $100	☐ $50	☐ $50	☐ $50	☐ $100	☐ $125	☐ $100	
Resident/Trainee (Non-CNS Member)	☐ $450	☐ $450		☐ $50	☐ $50	☐ $50	☐ $100	☐ $125	☐ $100	
Medical Student (CNS Member)	☐ $150	☐ $150		☐ $50	☐ $50	☐ $50	☐ $100	☐ $125	☐ $100	
Medical Student (Non-CNS Member)	☐ $250	☐ $250		☐ $100	☐ $100	☐ $100	☐ $100	☐ $125	☐ $100	
ACNN Member (Nurse)	☐ $350	☐ $250		☐ $50	☐ $50	☐ $50	☐ $100	☐ $125	☐ $100	
Nurse (Non-ACNN Member)	☐ $450	☐ $450		☐ $100	☐ $100	☐ $100	☐ $100	☐ $125	☐ $100	
Non-CNS Member	☐ $950	☐ $950		☐ $100	☐ $100	☐ $150	☐ $100	☐ $125	☐ $100	
Non-CNS Member (ABPN Board Certified)	☐ $750	☐ $750		☐ $100	☐ $100	☐ $150	☐ $100	☐ $125	☐ $100	
Program Coordinator Program		☐ $350								
Guest Fee	☐ $150									

REGISTRATION

ALL registrations will be on-line with link posted on CNS website and sent to members via *eConnections*.

REGISTRATION CONFIRMATION

- ***E-mail confirmation only*** (include address)
- Hotel registration and confirmation must be handled independently with the meeting hotel.

CANCELLATIONS AND REFUNDS

Registration may be cancelled with the following fees and penalties:

- All cancellations must be made in writing, via email and sent to registration@childneurologysociety.org.
- Cancellations received **on or before September 1, 2021** are eligible for a full refund less $75 administrative fee. Cancellations received **after September 1, 2021** are not eligible for a refund.
- You can change your registration from the All Access/Live registration to the Virtual Only option at no additional charge. Please contact registration@childneurologysociety.org.
- In the event the CNS must cancel the live meeting due to unforeseen circumstances, CNS will automatically enroll all registration to a Virtual option or give the registrant the option of a full refund within 10 business days after the meeting cancellation. In the event of cancellation of any portion, or entire event, CNS does not assume responsibility for any additional costs, charges, or expenses; to include, charges made for travel and lodging.

SPECIAL NEEDS

We are committed to making this CME activity accessible to all individuals. If you need auxiliary aid(s) or service(s) as identified in the American with Disabilities Act, or have a dietary restriction, please describe your needs when registering on-line. Most requests can be accommodated if notification is received by August 31.

CONNECTING WITH COLLEAGUES
Professors & Educators of Child Neurology

Dear Colleagues,

Nancy Bass, MD | President, Professors & Educators of Child Neurology

The CNS meeting in Boston is fast approaching – a very special gathering, indeed, as we join, some in person and some via technology, to celebrate this monumental historical landmark in the 50th anniversary celebration for the Child Neurology Society. As we commemorate this remarkable event, I am honored to share with you some previews of the upcoming fall Professors & Educators of Child Neurology (PECN) meeting and conclude with some reflective remarks on the impact many CNS members have had on my career as a child neurologist.

This has been a busy year for the PECN, with the addition of the word "educators" to the official name. This change in our name exemplifies the mission and inclusiveness of the education leaders of all trainees in child neurology and NDD. We have been working in concert with the CNS as part of the diversity and equity task force and will be presenting a diversity, equity and inclusion survey to the CNS executive board for approval and then distribution to members in the near future. This is an important start in assessing the state of this CNS/PECN initiative regarding this vital topic and will be a spring board for addressing the needs of our members going forward.

As reflected in our updated name, we are working with the membership committee and executive board to define and expand PECN membership to include clerkship and fellowship directors. In addition, we will be finalizing committee directives by redefining the roles and names of these committees into the medical student, resident and fellowship committees. We will soon be sending out a request to members who would be interested to serve on one of these committees. With our expanded membership we are excited to embark on a new initiative: PECN program director mentorship program. The intent is to pair newer program directors with those of us a bit more seasoned. We will also be sending out requests for interest in this exciting program; Dr. Marc DiSabella will serve as the lead of this program. As part of this initiative, we plan to have an educator's link on our PECN webpage where helpful tools for those navigating the sometimes confusing topics like milestones, annual program evaluations, sample program evaluations will be "only a click away." These topics and more will be addressed in the PECN Annual Meeting, to be held live in Boston and videotaped for subsequent viewing by all members unable to attend.

I am very excited about our CME program for our meeting in Boston. (NOTE: This session will begin at 3:00 pm, five minutes following the conclusion of the PECN Business meeting. This is a CME session included as part of the overall CNS meeting and, as such, live-stream access will be limited to those registering for the CNS meeting. A recorded video of the session will be available after the virtual platform closes November 2). This session will include a presentation from Dr. Jessica Goldstein on how to incorporate a virtual learning curriculum through the pandemic and beyond. We will then hear from CNS Electronic Communications Committee Chair, Dr. David Hsieh with tips for the use of educational tools on the CNS website as well as navigating social media for our organization. This will be followed with a very timely and exciting presentation from a dynamic group of medical students, Deonna Reese-White and Roxanna Nahvi, who have developed the Neuroequity Coalition. They will introduce us to this organization and discuss how to implement this into a residency curriculum. We will be finishing out the program with a very timely talk from Dr. Margie Ream who will be discussing the virtual interviewing season through the pandemic and beyond.

I have had the great honor to work with many child neurologists who have helped shape my career as the years have flown by. From my early pediatric residency years, Dr. Augusto Morales was the first to introduce me to this outstanding specialty. I started my training learning the practice of child neurology from four amazing mentors, Dr. David Rothner, Dr

pecn
Professors & Educators of Child Neurology

Gerald Erenberg, Dr. Elaine Wyllie and Dr. Bruce Cohen. I then found myself, a new green attending, moving across the country by myself to begin my career as a child neurologist. There were many who helped shape my career back then, including Dr. Donna Ferriero, an absolute role model for a strong successful woman in medicine. Being taken under someone's wing is something I wish and hope all trainees and those early in their career can experience. In considering all the amazing mentors in my career one definitely sticks out as the most inspirational: a kind, compassionate, diagnostic wizard who reached out to this "green" and anxious newbie and became a mentor, friend and exemplified a blue print of the kind of child neurologist I wanted to be. This remarkable child neurologist was Dr. Bruce Berg.

I remember the stress of being a new attending, in love with my role as a clinician and teacher but not really finding my place in the research world. Dr. Berg frequently guided me and was the first to educate me on the very diverse roles a child neurologist can play: the clinician, the educator and the researcher. He told me, "Dr. Bass, you will know which role suits you and will find yourself fitting into that role like a glove." The time you spend teaching your residents is equal in value to the time a colleague may spend dissecting a rat brain. Here was advice from a consummate clinical child neurologist who could walk into a room and within seconds know the answer to the child's presentation just by his keen diagnostic insights. I took this advice to heart. I passionately embraced the academic educator role. He was right, it fit me like a glove!

As I look forward to our 50th anniversary meeting in Boston, I do so with a sense of sadness but also with thankfulness. I remember all the CNS meetings I would meet up with Bruce, chatting about life, the ever changing world of child neurology and what the future holds. Although he will not be there for this monumental anniversary meeting, he will definitely be represented by my presence. If I could meet up with Bruce one more time, I would tell him the role he played in my career as I serve as the President for the Professors and Educators of Child Neurology. I would tell him; he was right and that I pass his advice on to all the trainees who come through our program. Find your "glove." Find what gives you joy, passion, and relish in this amazing discipline you are a part of.

Boston here we come!

Got a project or colleague working on a project that you'd like to see featured?

Send email to:
Dan Bonthius
(daniel.bonthius@atriumhealth.org)
cc Roger Larson
(rblarson@childneurologysociety.org)

Child Neurology Foundation Launches Dr. Kenneth F. Swaiman Medical Student Scholarship

To honor the legacy of Dr. Swaiman and his contribution to child neurology, the Child Neurology Foundation's (CNF) Board of Directors is pleased to announce the establishment of the Dr. Kenneth F. Swaiman Medical Student Scholarship thanks to the support of his wife and pediatric neurologist Dr. Phyllis Sher.

Dr. Sher writes: "In addition to starting multiple organizations and publications, throughout his life Ken Swaiman was committed to educating and supporting individuals at multiple levels of their professional careers in the field of child neurology. In keeping with his efforts, I am pleased to support this scholarship and know that he would consider the education of medical students an important step forward in that tradition."

Administered annually beginning in May 2022, the $5,000 summer research scholarship will be given to each of three (3) U.S. or Canadian medical students who have an interest in exploring a career in child neurology. Additional monies for all travel expenses to attend the annual Child Neurology Society meeting will be provided. The award will be open to second- or third-year medical students for a basic or clinical research project in child neurology conducted under the direction of a child neurologist.

"Dr. Swaiman had the opportunity to train nearly 100 pediatric neurologists during his career," said Amy Brin, Executive Director and CEO of Child Neurology Foundation. "This scholarship will ensure that his legacy and commitment to the field lives on as we enter a time of great need for more child neurologists. For that, we are so thankful to Dr. Sher for her generous gift to help establish this scholarship in his name."

The official announcement of the scholarship will be made at the Child Neurology Society's 50th Annual Meeting during the Kenneth F. Swaiman Legacy Luncheon on Wednesday, September 29th at 11:30 AM. More information will follow regarding the submission process and requirements, along with the selection criteria.

Any practicing child neurologist interested in mentoring a medical student for the Dr. Kenneth F. Swaiman Medical Student Scholarship should reach out to Child Neurology Foundation at info@childneurologyfoundation.org.

Child Neurology FOUNDATION
Creating a Community of Support

Join Us at the Annual Child Neurology Foundation Symposium

Shortening the Diagnostic Odyssey in Children with Neurologic Conditions

Wednesday, September 29th, 8-11 am EST at the CNS Annual Meeting

Are you frustrated when you can't get a diagnosis for a child under your care? What should you do next? Is Whole Genome Sequencing a viable option?

This year, CNF offered Whole Genome Sequencing (WGS) for free to 25 families who had tried every test possible but were still struggling to get a diagnosis. And the results were inspiring!

We'll share our exciting results and cover:

- How to get from gene identification to a treatment plan
- What to do with variants of unknown significance
- How to get patients enrolled in disease-specific clinical trials, including insight on N of 1 trials
- How to support families on their diagnostic journey, even when there is no diagnosis or current treatment available
- How to effectively collaborate with families, researchers, industry, and government to get answers

During our symposia you will hear from a great group of speakers, including:

- Scott L. Pomeroy, MD, PhD, Harvard Medical School, Boston Children's Hospital
- Anup D. Patel, MD, FAAN, FAES, Nationwide Children's Hospital
- Erika Augustine, MD, MS, Kennedy Krieger Institute
- Christelle Moufawad El Achkar, MD Harvard Medical School, Boston Children's Hospital
- Heather C. Mefford, MD, PhD, St. Jude Children's Research Hospital
- Annapurna Poduri, MD, MPH, Boston Children's Hospital, Harvard Medical School
- Anne Berg, PhD, Northwestern University Feinberg School of Medicine
- Louise Bier, MS, CGC, Columbia University
- Krista Harding, National Multiple Sclerosis Society
- Adam L. Hartman, MD, National Institute of Neurological Disorders and Stroke

Space is limited. Be sure to add the symposia when you register for the annual meeting. And we hope you will join us, to learn what you can do today to help shorten the diagnostic odyssey and improve outcomes for the children and families that trust in your care.

This initiative is supported by:

Believer Industry Partner: Neurogene

Industry Partners: BioMarin, Genome Medical, Greenwich Biosciences, Illumina, Mallinckrodt Pharmaceuticals, PTC Therapeutics, Stoke Therapeutics, Regenxbio, UCB, Ultragenyx, and Zogenix

Believer Partner: TSC Alliance

Activist Partners: NeurAbilities and SynGAP Research Fund

Community Partners: Dravet Syndrome Foundation, FamilieSCN2A Foundation, GLUT1 Deficiency Foundation, Lennox-Gastaut Syndrome Foundation, and Phelan-McDermid Syndrome Foundation

Child Neurology FOUNDATION
Creating a Community of Support

Congratulations to the 2021 Research Grant & Scholarship Winners!

Every year, the Child Neurology Foundation – along with the Child Neurology Society and Pediatric Epilepsy Research Foundation – awards research grants and scholarships to several young investigators, aimed at identifying treatments and cures for pediatric neurologic diseases. Congratulations to our 2021 winners!

2021 Pediatric Epilepsy Research Foundation (PERF) Elterman Research Grant

Autumn S. Ivy, MD, PhD,
UC Irvine School of Medicine

RESEARCH TITLE:
Targeting Epigenetic Mechanisms of Exercise to Preserve Cognitive Function After Early-Life Adversity

Autumn Ivy, MD, PhD, is an Assistant Professor of Pediatrics, Neurology, and Anatomy/Neurobiology at the University of California, Irvine School of Medicine. She completed her residencies in Pediatrics and Child Neurology at Lucile Packard Children's Hospital at Stanford University. She has also received early career support from the Child Neurologist Career Development Program (CNCDP-K12) and the Robert Wood Johnson Foundation Amos Award.

For more about Dr. Ivy and her research, visit:
www.childneurologyfoundation.org/perf-elterman-grant/

2021 Pediatric Epilepsy Research Foundation (PERF) Shields Research Grant

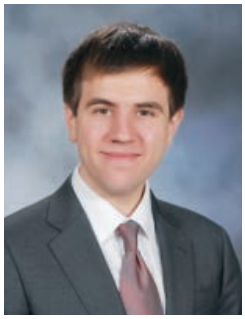
Nathan T. Cohen, MD, FAAP
George Washington University School of Medicine

RESEARCH TITLE:
Defining pharmacoresistant epileptic networks in pediatric focal cortical dysplasia

Nathan Cohen, MD, FAAP, is an Assistant Professor of Neurology and Pediatrics at The George Washington University School of Medicine and attending epileptologist and child neurologist at Children's National Hospital in Washington, DC. Dr. Cohen earned an ScB in neuroscience from Brown University, where he was elected to Sigma Xi. He obtained his MD from the University of Virginia School of Medicine.

For more about Dr. Cohen and his research, visit:
www.childneurologyfoundation.org/perf-shields-grant/

CNF Neurodevelopmental Disabilities (NDD) Summer Research Scholarship



Cole Deisseroth
Baylor College of Medicine

Cole Deisseroth is a first-year medical student in the Medical Scientist Training Program of Baylor College of Medicine (BCM).

He is working with Dr. Hsiao-Tuan Chao at the Jan and Dan Duncan Neurological Research Institute affiliated with Texas Children's Hospital and BCM on a study of Early B-Cell Factor 3 (EBF3)-related Hypotonia, Ataxia, and Delayed Development Syndrome (HADDS) to elucidate the genotype-phenotype spectrum and correlate developmental delays with variant type and location.

For more about Mr. Deisseroth and his research, visit:
www.childneurologyfoundation.org/ndd-scholarship/

Child Neurology Foundation Updates Mission, Elevates Support for Medical Professionals

Celebration of the Child Neurology Foundation's (CNF) 20th anniversary this year brings with it an exciting update to their mission and an added focus on supporting medical professionals as they seek to help children and families get the best quality of care possible.

Known for tackling complex issues head-on by convening stakeholders from around the child neurology community, including neurologists and nurses, the change in mission aligns with CNF's vision for a world in which all children affected by neurologic disorders reach their full potential. This update further reinforces CNF's commitment to medical professionals, acknowledging the critical role they play in achieving the vision.

"Medical professionals are an integral part of the child neurology community and our mission," said Amy Brin, Executive Director and CEO of the Child Neurology Foundation. "They are the unsung heroes, the ones working day-in and day-out to help children and families navigate the healthcare system and make informed decisions during their diagnostic journey. We felt it was time to solidify our commitment to them."

The change comes after the Board of Directors at the Child Neurology Foundation, and the Presidential Line along with the Executive Director of the Child Neurology Society, unanimously approved the revised mission this summer, in a move to reaffirm the need to work in lock step to overcome the systemic issues facing the child neurology community.

"We are thrilled," said Dr. Phillip Pearl, President of the Child Neurology Society. "CNF has brought the medical community to the table time and again to address the challenges we face in getting these children the care they need. And I want to thank Dr. Pomeroy for his leadership through this as we worked to get the revised mission solidified. I am so proud of the relationship we've built, and I am excited to see what we can accomplish together."

With the update, CNF will ramp up their data gathering and communication with medical professionals, and focus on developing education, resources, and support on topics that highlight the interconnectedness and importance of the relationship between healthcare professionals, patients, and their caregivers.

"This is a historic moment, and the child neurology community as a whole will benefit from it. We are so excited to dig in and get to work," said Brin.

CONNECTING WITH YOUR FUTURE
Personnel Registry

CNS PERSONNEL REGISTRY

ARKANSAS

CHILD NEUROLOGY FACULTY OPPORTUNITY – EXCELLENT WORK-LIFE BALANCE

On behalf of Freedom Perkins, MD, Section Chief, Pediatric Neurology at Arkansas Children's Hospital (ACH), CareerPhysician, the leader in academic pediatric executive search is pleased to inform you of the national search for qualified faculty candidates to join the division at the ACH Northeast campus.

The new neurologist will inherit the established practice of a retiring faculty member and enjoy practice in a new outpatient clinic that provides sub-specialty care to children in Northeast Arkansas, West Tennessee, and Southeast Missouri. Faculty enjoy excellent access and connection to the academic mission while maintaining a tremendous quality of life, and a balanced schedule that optimizes personal time and interests away from medicine.

Opportunity Highlights:

- Associate Medical Directorship opportunity available for a physician who has interest in working with the Section Chief to develop and implement strategies for programmatic growth in Northeast Arkansas.
- Turn-key position, assuming the practice and patients of a highly respected pediatric neurologist with a 25+year history serving in collaboration with Arkansas Children's Hospital. Practice in a newly renovated multi-specialty clinic with new equipment for EEG and telemetry.
- Ability to follow your patients and participate in scholarly activities at the ACH Little Rock campus, including weekly case reviews, monthly divisional activities, resident education, as well as research and quality improvement projects.
- Busy outpatient clinic with a broad spectrum of neurologic disorders, including epilepsy, headache disorders, movement disorders, neurodevelopment, spasticity and stroke. Opportunities to develop subspecialty areas of interest and multidisciplinary clinics are abundant.
- The compensation package for this role includes a competitive salary at the 80% tile, a $25,000 sign-on bonus, excellent benefits retirement package with strong institutional matching program, relocation assistance, yearly educational fund, and an educational-debt retirement program for qualified applicants.
- This position offers 4 days per week of outpatient clinic, with 1 day per week of administrative time and 2 nights of phone call only with no weekends or holidays.
- J-1 and H-1 visa support provided to qualified applicants.
- Located just 1 hour from Memphis and 2 hours from Little Rock, Jonesboro is one of Arkansas' most progressive cities with one of the fastest community growth trajectories in the state. City resources include an excellent combination of family friendly amenities - superb public schools, pristine parks, aquatic parks, mountain biking trails and museums. The area also offers a growing restaurant scene located in the revitalized downtown near great boutiques and retail.

For more details about this opportunity, or if you would like to recommend an individual(s) who exemplifies the qualities we are seeking in a candidate, please contact Mark Lozano at mark@careerphysician.com, or at 469/553-9311. All interactions will remain confidential, and no inquiries will be made without the consent of the applicant.

UAMS and Arkansas Children's Hospital is an AA/EOE/ADA employer committed to excellence through diversity.

CNS PERSONNEL REGISTRY

CALIFORNIA

BENIOFF CHILDREN'S HOSPITAL OAKLAND DIVISION, DEPARTMENT OF NEUROLOGY

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO SCHOOL OF MEDICINE

The Department of Neurology at UCSF is seeking board eligible/board certified Child Neurologists to join our Benioff Children's Hospital Oakland (BCHO) Division. The selected candidates will be appointed at the Instructor, Assistant, Associate, and full Professor ranks of the Health Sciences (HS) Clinical faculty series.

Formerly Children's Hospital Oakland, BCHO has delivered exceptional medical care to children from all regions of California for over 100 years. More than 2,600 staff and 550 physicians at BCHO care for more than 10,000 inpatients and 250,000 outpatients each year. Our trauma center is an ACS verified Level 1 Pediatric Trauma Center (one of only five in California) and is dedicated exclusively to caring for children, with over 400 air transports and 48,000 emergency room visits per year. The Benioff Children's Hospitals have over 30 pediatric sub-specialties and are ranked by *U.S. News & World Report* among the nation's "Best Hospitals".

Child Neurology is an integral part of the UCSF Pediatric Brain Center and is a destination program bringing together physicians from all disciplines related to nervous system health in children. The San Francisco and Oakland Child Neurology and Pediatric Neurosurgery programs are integrating into one marquee service line spanning both campuses. Neurology faculty actively participate in the teaching of residents and medical students. Physicians may be involved in clinical research, clinical trials, as well as basic research and translational research.

Qualified candidates must possess a medical degree from an accredited medical school, medical license in the State of California, accredited residency training in Child Neurology, and Board eligibility or Certification in Neurology with Special Certification in Child Neurology at the time of appointment. Clinical interest and experience in treating epilepsy is also required due to the high volume of epilepsy patients in our practice. Candidate's CV and/or cover letter must state qualifications (or if pending) upon submission.

Specific Responsibilities:

- Participation in shared 1 in 6 call coverage with the other members of the

Oakland campus division
- Participation in training/supervision and clinical mentoring of residents and medical students
- Provision of patient care in the ambulatory and inpatient settings
- Provision of EEG interpretation

General Responsibilities:
- Participates as requested in quality improvement, utilization management, and other institutional initiatives
- Provides and/or serves as a resource for patient/family and staff education
- Provides accurate, complete and timely documentation of clinical services rendered using the Epic electronic health record
- Ensures communication with other specialists and primary care providers to facilitate patient care
- Participates in meetings/activities as required to support operations of the clinical area
- Participates in continuing medical education and other activities to maintain and enhance professional development
- Participation in scholarly and University service activities

Applicants must apply online at https://apptrkr.com/2314783, with a cover letter, CV, a statement of contributions to diversity, and the names, titles, and e-mail addresses of three peer references who we may contact directly. Applications received outside the online process will not be considered, but informal inquiries can be directed to Dr. Daniel Birnbaum, Chief of the BCHO Division, at DBirnbaum@mail.cho.org.

UCSF seeks candidates whose experience, teaching, research, or community service has prepared them to contribute to our commitment to diversity and excellence. The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, or protected veteran status.

PEDIATRIC EPILEPTOLOGIST

I am a PERMANENTE PHYSICIAN.

A dedicated doctor who believes in pursing dreams, creating hope, and driving progress.

While every physician at the Southern California Permanente Medical Group has their own personal and professional ambitions, they all share a common vision: to transform the practice of medicine. Every day, they work hand in hand – with each other and their patients – to achieve outcomes that elevate the level of care across our organization and, ultimately, our nation.

PEDIATRIC EPILEPTOLOGIST

Opportunities in Southern California

The Kaiser Permanente Southern California Medical Group (SCPMG) is seeking a fellowship-trained board eligible/board certified Pediatric Epileptologist to join a well-established, growing group. We offer comprehensive multidisciplinary support across the region, including a Ketogenic Dietician, a full range of pediatric neurology and pediatric epilepsy services, as well as a well-balanced call schedule and working environment.

Within the Southern California Permanente Medical Group (SCPMG) we have:
- A NAEC-accredited Level IV Pediatric Epilepsy Center (Los Angeles)
- Three Tertiary Care Medical Centers (Los Angeles, Orange County, San Bernardino County)
- Three Pediatric Centers of Excellence (Downey, Los Angeles, San Bernardino County)

SCPMG is an organization with strong values, which provides our physicians with the resources and support systems to ensure they can focus on practicing medicine, connecting with one another, and providing the best possible care to their patients. In Southern California, you'll enjoy amazing recreational activities, spectacular natural sceneries, and an exceptional climate.

SCPMG is proud to offer its physicians:
- An organization that has served the communities of Southern California for more than 65 years
- A physician-led practice that equally emphasizes professional autonomy and cross-specialty collaboration
- Comprehensive administrative support
- An environment that promotes excellent service to patients
- A fully implemented electronic medical record system
- An excellent salary, comprehensive benefits and partnership eligibility after 3 years

We invite you to make a difference in the communities we serve.

For consideration or to apply, please visit our website at https://scpmgphysiciancareers.com/specialty/neurology/

For questions or additional information, please contact Michelle Johnson at 866/285-5438 or Michelle.S1.Johnson@kp.org. We are an AAP/EEO employer.

The Answer to Health Care in America.

RECRUITING 2 FACULTY MEMBERS – EPILEPSY AND GENERAL NEUROLOGY

Clinical Neurology Faculty Position

The Division of Neurology, Children's Hospital Los Angeles and the Keck School of Medicine of the University of Southern California (USC) are actively seeking an epileptologist and/or a general neurologist as a full-time faculty member for the position of Assistant/Associate Professor of Clinical Neurology and Pediatrics to join its current team of 19 faculty members. For the epilepsy faculty position, experience with CURRY software, Stereoelectroencephalography and transcranial magnetic stimulation preferred.

Division of Neurology:
The Division of Neurology is part of the Neurosciences Service Line (the Neurological Institute) which has been highlighted as a key service line by the hospital. The Division of Neurology is currently undergoing rapid expansion with the development of comprehensive clinical

CALIFORNIA continued

general and sub-specialty child neurology programs as well as enhancement of its research portfolio. A brand-new integrated clinic space for the Divisions of Neurology and Neurosurgery opened in the Spring of 2021. The goal of the Neurologic Institute is to offer comprehensive and integrated neurologic services in a patient-centered environment.

Comprehensive Epilepsy Center:
Our group has considerable clinical and neurophysiologic resources. We have four pediatric board-certified epileptologists with a busy epilepsy surgery program offering ECoG-guided resections, phase II studies with implanted grids/strips and depths, stereo-EEG, EEG source localization and minimally invasive laser ablation. We have a large VNS program and are initiating pediatric RNS. We follow over 150 children on either ketogenic diet or modified Atkins diet with the help of two full time dietitians. We have a robust pediatric epilepsy anticonvulsant clinical trial program and currently participate in over 10 national clinical trial studies. CHLA has an active outpatient EEG lab, a dedicated 6-bed pediatric EMU, wired video EEG playroom and neuro-critical care EEG monitoring service. Our Comprehensive Epilepsy Program includes a spectrum of multi-disciplinary Epilepsy Surgery, Ketogenic Diet Therapy, Epilepsy Genetics and New Onset Seizure Clinics. Our epilepsy program is supported by one physician assistant and three nurse practitioners. The CHLA Center for Personalized Medicine has a strong relationship with our epilepsy team and all testing for epilepsy genetic syndromes can be performed in-house with support from affiliated genetic counselors. In addition, the Division of Neurology has an ACGME-approved pediatric epilepsy fellowship program which accepts two fellows annually in addition to the ACGME-approved child neurology residency program which operates in collaboration with the KSOM LAC + USC/University Hospital

CHLA is a busy urban teaching hospital with a diverse patient population. New hospital facilities opened in July 2011 with an increase to 311 beds. There is a very active outpatient neurology clinic with subspecialty programs in neuromuscular disorders (MDA), epilepsy (including epilepsy surgery, VNS and ketogenic diet), movement disorders (including deep brain stimulation and baclofen pump), neuro-intensive care, pediatric stroke, neurocutaneous disorders and demyelinating disorders. Our faculty currently provides outpatient clinical services to CHLA and five satellite clinic locations within the greater Los Angeles area. The division has an ACGME-approved child neurology residency program which operates in collaboration with the KSOM LAC + USC/University Hospital. Our division accepts three child neurology residents per year who divide their time between the two sites. Furthermore, there is ongoing clinical research within our general child neurology and subspecialty programs.

Academic appointment through the Keck School of Medicine of USC is available at a level appropriate to training and experience. CHLA and USC strongly values diversity and is committed to equal opportunity in employment. Women and men, and members of all racial and ethnic groups, people with disabilities, and veterans are encouraged to apply.

If you are interested contact Diana Babayan, Division Administrator of Neurology at dbabayan@chla.usc.edu.

CHLA and USC are equal opportunity, affirmative action employers. The division greatly values diversity and is committed to building a vibrant and culturally diverse community of faculty that best reflects the patients and families that we serve. Individuals from underrepresented groups in medicine are especially encouraged to apply.

Website:

https://usccareers.usc.edu/job/los-angeles/clinical-assistant-professor-of-neurology-and-pediatrics-clinician-educator-chla/1209/8827943376

CNS PERSONNEL REGISTRY

COLORADO

PEDIATRIC NEUROLOGIST TO JOIN 3 IN DENVER

In 2022, Rocky Mountain Pediatric Neurology and Sleep Medicine will welcome a fulltime pediatric neurologist to this hospital-based practice in Denver, CO.

Qualified Candidates:
- Available to start in 2022
- BE/BC child neurology
- Epilepsy or sleep medicine training is of particular interest but not a requirement
- Ideal candidate will have an entrepreneurial spirit and be enthusiastic/eager to develop his/her own neurology practice
- Open to same-day/in-out travel to outreach locations for practice growth

Incentive/Benefits Package:
- Competitive hospital-employed salary and excellent benefits package
- CME time and expenses
- Occurrence-based malpractice
- Relocation assistance
- Employee stock purchase plan

About Rocky Mountain Pediatric Neurology & Sleep Medicine/ Rocky Mountain Hospital for Children:
- A broad array of out-patient and in-patient child neurology that includes high level ICU care
- A Tri-state referral region
- Very collegial working environment between various hospital departments and other pediatric specialists
- Collaboration with the RMHC Neurosciences team which includes Pediatric Neurosurgery, Pediatric PM&R, as well as other support services
- Developing subspecialty interests is encouraged and supported.
- Opportunity to engage in community programs, teaching, hospital committees, etc.

Rocky Mountain Hospital for Children (RMHC) is located in midtown Denver, part of HealthONE, Denver's largest hospital system and part of HCA Healthcare, a leading national healthcare system with 187 hospitals. RMHC has 53 pediatric beds and 20 PICU beds with more than 300 affiliated pediatric specialists, neonatologists, and maternal-fetal specialists. A Level IV, 84-bed NICU draws from a five-state area.

Denver is one of the healthiest and fastest growing cities in the country. The mile high city enjoys breathtaking views of the Rockies to the west and residents are 90 minutes from some of the best skiing and hiking in the world. Coloradans are serious about sports. We watch our professional teams and play with amateur and youth clubs at every level of performance. With 300 annual days of sunshine, residents to play, walk and run outdoors all year. Denver is home to rising stars in culinary and craft brewing culture and arts patrons

enjoy the largest collection of performing arts stages under one roof in the world. At just over 3 million people, Denver is big enough to accommodate any residential preference from urban lofts to family-focused suburban communities and equestrian properties with rural acreage.

Website:
https://rockymountainkidsneuro.com/

Contact:
Therese Karsten
therese.karsten@hcahealthcare.com

CNS PERSONNEL REGISTRY

DISTRICT OF COLUMBIA

CHILD NEUROLOGIST

The Division of Child Neurology, Children's National Hospital, is seeking a child neurologist at the assistant professor level to join our Programs in Critical Care Neurology and Pediatric Stroke and Cerebrovascular Disorders. The Divisions of Child Neurology, Epilepsy, and Neurophysiology have over 35 child neurologists in several subspecialty programs, including neuromuscular disorders, epilepsy, neuro-oncology, neurogenetics, movement disorders, neuroimmunology, neonatal neurology, critical care neurology, stroke, headache, and concussion, all with a mission of excellence in clinical care, education, and research.

Our critical care neurology service cares for patients in the pediatric and cardiac intensive care units and includes an outpatient follow-up program focused on children with acquired brain injury. Our Program in Stroke and Cerebrovascular Disorders spans the continuum of care from the emergency department to the intensive care unit to the clinic and includes an outpatient follow-up program that incorporates the care of multiple subspecialties.

Clinical responsibilities include the care of patients with neurologic disorders in the pediatric and cardiac intensive care units as well in subspecialty and multidisciplinary cerebrovascular and ICU follow-up clinics. Teaching responsibilities include the teaching and supervision of child neurology trainees, critical care medicine trainees, and neurology advanced practice providers. Academic opportunities include participation in research, quality improvement, and program innovation in critical care neurology and pediatric stroke.

Qualifications:
Candidates must have an MD or equivalent and be board-certified or board-eligible in neurology with special qualifications in child neurology (ABPN). The candidate will have fellowship training in critical care neurology with a special interest and training in pediatric stroke and cerebrovascular disorders. The candidate will also have experience in the long-term multidisciplinary follow-up care of patients with stroke and other acquired brain injuries; this should be of sufficient breadth and depth so as to put the candidate in a position to assume leadership of the stroke and ICU follow-up programs. Moreover, the candidate will have an interest and ability to use tele-health to expand our existing acute stroke program and to create a tele-stroke network program that encompasses our referring institutions.

Interested candidates should send a CV to:
William D. Gaillard, MD
Division Chief, Child Neurology, Epilepsy, and Neurophysiology
Children's National Hospital
wgaillar@childrensnational.org

CNS PERSONNEL REGISTRY

FLORIDA

PEDIATRIC NEUROLOGIST

UF Health Regional Physicians with The Studer Family Children's Hospital at Ascension Sacred Heart in Pensacola, Florida seeks a second Pediatric Neurologist. The practice will provide inpatient consultation services, reading of inpatient and outpatient EEGs and outpatient follow-up clinic. In addition to clinical care, opportunities for Pediatric Resident education and research projects exist. This is an outstanding opportunity to be a part of a patient-centered, collegial group committed to delivering high-quality clinical care. The selected candidate(s) will enjoy a market-based, competitive salary and comprehensive benefits package.

About UF Health:
UF Health represents the shared vision and commitment to patient care excellence of more than 22,000 employees of the University of Florida Health Science Center and UF Health Shands health care system. With campuses in Gainesville and Jacksonville, UF Health includes six health colleges, nine research institutes and centers, two teaching hospitals, two specialty hospitals and a host of physician medical practices and outpatient services throughout north central and northeast Florida. Our mission is to promote health through outstanding and high-quality patient care; innovative and rigorous education in the health professions and biomedical sciences; and high-impact research across the spectrum of basic, translational and clinical investigation. The UF Health Regional Physicians Network represents the extension of our spectrum of patient-care services to regional community under the University of Florida's College of Medicine.

The Studer Family Children's Hospital celebrated its 50th year in 2019 with the opening of a new Children's Hospital. The Children's Hospital has a full complement of pediatric subspecialties and support programs. Through UF Health and Ascension Sacred Heart, we are staying on the leading edge of children's healthcare. Our mission is to promote health through outstanding and high-quality patient care; innovative and rigorous education in the health professions and biomedical sciences; and high-impact research across the spectrum of basic, translational and clinical investigation. The UF Health Regional Physicians Network represents the extension of our spectrum of patient-care services to regional communities under the University of Florida's College of Medicine.

Pensacola is a beautiful and vibrant coastal city in the western Florida panhandle. The family-friendly city has a flourishing downtown and waterfront, numerous outdoor activities and cultural offerings, and the #1 beach in Florida according to USA Today. With a low cost of living and no state income tax, Pensacola has something to offer everyone.

The University is an equal opportunity, affirmative action employer committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status in all aspects of employment including recruitment, hiring, promotions, transfers, discipline, terminations, wage and salary

administration, benefits, and training.

Website:
https://explore.jobs.ufl.edu/cw/en-us/job/514109/uf-health-regional-physician-pediatric-neurologist-pensacola-florida

Contact:
Jason Foland
jason.foland@ascension.org

PEDIATRIC NEUROHOSPITALIST

Johns Hopkins All Children's Hospital (JHACH) in St. Petersburg, Florida is recruiting an additional pediatric neurohospitalist for our rapidly expanding Child Neurology Program. Our 259-bed teaching hospital has been ranked as a *U.S. News & World Report* Best Children's Hospital in 8 pediatric specialties including Neurology and Neurosurgery (2021-2022). JHACH is the only US hospital outside of the Baltimore/Washington, D.C. location that is part of the Johns Hopkins Medicine system. This is an employed position with All Children's Specialty Physicians, a growing group practice that includes more than 200 physicians. Pediatric neurohospitalists will work a schedule of 7 days on - focusing on neurology consultations in the pediatric NICU, PICU, pediatric floor, and EC. The service week is followed by 7 days off. The following week entails seeing hospital and Emergency Center (EC) follow-up patients in the continuity clinic. We seek a well-trained child neurologist who is comfortable providing a wide spectrum of pediatric neurology care including long term EEG with video. Clinical neurophysiology trained neurologists are encouraged to apply.

As members of the Johns Hopkins All Children's Institute for Brain Protection Sciences, our pediatric neurologists also regularly draw upon the expertise of specialists in neurosurgery, neuroradiology, neuro-oncology, psychiatry, genetics, neuropsychology, and neuropathology. This multidisciplinary institute unites clinicians, researchers and educators in a comprehensive program to promote optimal neurodevelopment early in life and provide state-of-the-art care for children with injuries or illness that can affect the brain. Johns Hopkins All Children's Hospital is designated a NAEC Level 4 epilepsy center. The $100 million Research and Education Building houses our graduate medical education and simulation programs, as well as an expanded biorepository. It has been designed to promote education and research collaboration with our other core institutes: Heart, Maternal, Fetal & Neonatal, and Cancer & Blood Disorders. Members of the faculty consistently participate in the education of Neurology and Pediatrics residents and our Neuro-Oncology fellowship provides faculty with additional opportunities for teaching and research.

In addition to providing clinical care, participation in research will be strongly supported and encouraged. Qualified candidates are eligible for an academic appointment at Johns Hopkins University School of Medicine (academic rank is open and commensurate with experience).

We offer a competitive salary and benefits package including relocation assistance, paid vacation, paid time and expenses for CME, 403(B) self-contribution retirement plan, medical malpractice insurance with tail insurance, short and long-term disability coverage, and life insurance and health benefits.

The Tampa-St. Petersburg area offers year-round sunshine, abundant cultural and recreational activities, national sports venues, excellent schools and an affordable cost of living. We are centrally located to many of Florida's amenities, only minutes from beautiful gulf beaches, 90 minutes from Orlando and four hours from Miami.

To confidentially learn more details, please contact:
Joe Bogan
Providence Healthcare Group
(817) 424-1010 (Direct)
jbogan@provdoc.com

DIRECTOR OF PEDIATRIC EPILEPSY

Johns Hopkins All Children's Hospital (JHACH) in St. Petersburg, Florida seeks a Pediatric Epileptologist to lead our established program. Requirements include board certification in child neurology with fellowship training in epilepsy or clinical neurophysiology. JHACH is a 259-bed teaching hospital, ranked as a *U.S. News & World Report* Best Children's Hospital in eight pediatric specialties including Neurology and Neurosurgery (2021-2022). We are also ranked as the #1 Children's Hospital in Florida. JHACH is the only US hospital outside the Baltimore/Washington, D.C. location that is part of the Johns Hopkins Medicine system.

Our NAEC Level IV Epilepsy Center provides the full spectrum of epilepsy services, and we specialize in the comprehensive evaluation of patients who have difficult-to-treat epilepsy. The practice is limited to the evaluation of intractable epilepsy for advanced procedures such as epilepsy surgery, vagus nerve stimulation, ketogenic diet, complex medication management and clinical trials. We have an active epilepsy surgery program supported by the largest team of pediatric neurosurgeons in Florida. Members of our team have extensive experience with our state-of-the-art technologies including the robotic ROSA device, Monteris LITT laser ablation, and responsive neurostimulation. The epilepsy monitoring unit has six beds, integrated on the neurosurgery/neurology ward.

As members of the Johns Hopkins All Children's Institute for Brain Protection Sciences, our Pediatric Epilepsy and Child Neurology team regularly draws upon the expertise of specialists in Neurosurgery, Neuroimaging, Neuro-oncology and Neuropathology. This multidisciplinary institute unites clinicians, researchers and educators in a comprehensive program to promote optimal neurodevelopment early in life. The $100 million Research and Education Building houses our graduate medical education and simulation programs, as well as an expanded biorepository. Members of the faculty consistently participate in the education of Neurology and Pediatrics residents and our Neuro-Oncology fellowship provides faculty with additional opportunities for teaching and research. In addition to providing clinical care, participation in research will be strongly supported and encouraged. Qualified candidates are eligible for an academic appointment at Johns Hopkins University School of Medicine (academic rank is open and commensurate with experience).

We offer a competitive salary and exceptional benefits package including medical malpractice insurance, relocation assistance, paid vacation, paid time and expenses for CME, 403(B) retirement plan, short and long-term disability coverage, and life insurance.

The Tampa-St. Petersburg region is a premier place to work and live, offering

year-round sunshine, abundant cultural and recreational activities, sports venues, excellent schools, and an affordable cost of living. We are centrally located to many of Florida's amenities, only minutes from Tampa and the beautiful gulf beaches, two hours from Orlando and four hours from Miami.

For additional details, please contact:
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PEDIATRIC EPILEPSY

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Our NAEC Level IV Epilepsy Center provides the full spectrum of epilepsy services, and we specialize in the comprehensive evaluation of patients who have difficult-to-treat epilepsy. The practice is limited to the evaluation of intractable epilepsy for advanced procedures such as epilepsy surgery, vagus nerve stimulation, ketogenic diet, complex medication management and clinical trials. We have an active epilepsy surgery program supported by the largest team of pediatric neurosurgeons in Florida. Members of our team have extensive experience with our state-of-the-art technologies including the robotic ROSA device, Monteris LITT laser ablation, and responsive neurostimulation. The epilepsy monitoring unit has six beds, integrated on the neurosurgery/neurology ward.

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jbogan@provdoc.com

CNS PERSONNEL REGISTRY

ILLINOIS

CHILD NEUROLOGY POSITION WITH ESTABLISHED PRACTICE AT LEVEL 3 EPILEPSY CENTER IN IL

Carle Health is seeking an experienced BE/BC Pediatric Neurologist to join our established practice at Carle Foundation Hospital in Urbana, Illinois.

Practice Opportunity Details Include:

- Level III Perinatal services and Level III Epilepsy Center accredited by the National Association of Epilepsy Centers (NAEC)
- 100% child neurology practice with two other Pediatric Neurologists
- Call consists of only Pediatric Neurology patients
- Established sleep program
- Onsite MRI and CAT scanning equipment
- Referral base from more than 20 general Pediatricians
- Pediatric subspecialists include Critical Care, Surgery, Cardiology, Neurosurgery, Pulmonology, Gastroenterology, Genetics, Urology, Pediatric Psychologists, and Developmental-Behavioral
- 24 hour in-house coverage provided by Anesthesia, Intensivists, Trauma, and ED; Pediatric Hospitalist & PICU are available 24/7
- Dedicated Neonatal and Obstetric air and ground and Pediatric transport services
- Two Neurosurgeons (one is a BC Pediatric Neurosurgeon), a Neuro-ophthalmologist, six adult Neurologists, and two Neuropsychologists on staff
- Excellent benefit package: health/dental/life insurance, 403-B plan with employer match, LTD, relocation allowance, CME allowance, and paid malpractice insurance with 100% tail insurance covered
- 24-hour telephone nurse advisory system in place to help ease demands of call
- Flexible scheduling
- Experienced support staff
- Teaching and research opportunities are available with the University of Illinois College of Medicine, the nation's first medical school focused at the intersection of healthcare and engineering

Website:
https://carle.org/for-providers

Contact:
Reyna Lute
reyna.lute@carle.com

ILLINOIS continued

ASSISTANT/ASSOCIATE/PROFESSOR – PEDIATRICS NEUROLOGY

The Department of Pediatrics at the University of Illinois College of Medicine at Peoria (UICOMP) seeks Pediatric Neurology physicians for multiple positions at the level of Assistant/ Associate Professor or Professor/ Physician Surgeon of Pediatrics or of Clinical Pediatrics to enhance a growing division. The positions require 3 years of Pediatrics Residency and 3 years of Neurology Fellowship and can be tenure or non-tenure. Candidates must be BC/ BE in Pediatrics and Pediatric Neurology and will hold or be eligible for an Illinois physician's license.

The ideal Child Neurology candidate will be BC/BE in Pediatrics or in Neurology with a Pediatric Neurology concentration and will hold or have applied for an Illinois physician's license. Extensive clinical experience in pediatric neurology with advanced training in EEG and epilepsy is desired. The position includes patient care services, teaching medical students and residents, and opportunities to pursue research.

The primary teaching hospital of the UICOMP is the Children's Hospital of Illinois at OSF Saint Francis Medical Center (CHOI), a tertiary care facility serving a 37 county region with a population base of over two million.

Malpractice insurance is provided by the University of Illinois system and an excellent benefits package is available including vacations, sick time, CME, health and life insurance and retirement plan.

The University of Illinois may conduct background checks on all job candidates upon acceptance of a contingent offer. Background checks will be performed in compliance with the Fain Credit Reporting Act. UIC is an EOE/AAIM/F/ Disabled/Veteran.

The University of Illinois System requires candidates selected for hire to disclose any documented finding of sexual misconduct or sexual harassment and to authorize inquiries to current and former employers regarding findings of sexual misconduct or sexual harassment. For more information, visit https://www.hr.uillinois.edu/cms/One.aspx?portalId=4292&pageId=

For consideration, apply by August 31, 2021, at: https://jobs.uic.edu/job-board/job-details?jobID=140414

CNS PERSONNEL REGISTRY

INDIANA

PEDIATRIC NEUROLOGIST – INDIANAPOLIS

Peyton Manning Children's Hospital at Ascension St. Vincent is seeking a Pediatric Neurologist for our hospital in Indianapolis. Our ideal candidate will be comfortable with child neurology including epilepsy and inpatient and outpatient care.

Practice Highlights:

- Schedule: M-F 8am-5pm
- Call Schedule: 1 in 4 weeks, once every 4th night, 1:4 weekends
- Home to 300 Pediatric Specialists
- Largest level IV NICU and Pediatric ER in the state
- Opportunity to expand program and nationwide system referral base
- Full support of the world's largest catholic healthcare system
- The most specialized care in the state in one of the country's largest cities
- Physician-led organization
- Largest nonprofit health system in the country

Ascension St. Vincent offers a very competitive compensation package that includes: Competitive base salaries, Relocation allowance, CME, Comprehensive health benefits, Retirement savings plan (403b) with match, Malpractice with tail coverage and generous paid time off.

Peyton Manning Children's Hospital at Ascension St. Vincent is part of Indiana's largest not-for-profit health system with 22 ministries and over 3000 physicians. Features include: a free-standing tertiary care, pediatric hospital with 40 private inpatient beds and 6 short stay beds, staffed in-house 24/7 by our Pediatric Hospitalist group; a 23-bed PICU staffed 24/7 by Pediatric Intensivists; a 17-bed Pediatric Emergency department staffed 24/7 by Pediatric Emergency physicians; and Indiana's largest Level IV NICU with 96 beds staffed 24/7 by Neonatologists.

Interested?
Contact Ashley Smith, Physician Recruiter
Ashley.Smith10@Ascension.org

CNS PERSONNEL REGISTRY

MAINE

PEDIATRIC NEUROLOGIST

Northern Light Eastern Maine Medical Center

Northern Light Eastern Maine Medical Center has an excellent opportunity for a third BC/BE pediatric neurologist interested in the practice of general child neurology to join our well-established and growing pediatric neurology practice. We offer a broad-spectrum inpatient and outpatient pediatric neurology service including neurodiagnostics and imaging. Northern Light Eastern Maine Medical Center provides tertiary pediatric care for the region, offering a broad spectrum of pediatric sub-specialties, including cardiology, behavior/development, gastroenterology, genetics, surgery, hematology/oncology, endocrinology, anesthesiology and more. EMMC's inpatient pediatric service includes a 35-bed Level 3 neonatal intensive care unit, pediatric critical care, and pediatric hospitalists, all of which supports our pediatric neurology practice. Our pediatric sedation service/unit is long standing, providing extensive inpatient and outpatient services for the region.

Northern Light Eastern Maine Medical Center is a 411-bed tertiary care center and an ACS-verified level II trauma center with academic affiliations and serving a population of 500,000 living in the northern 2/3 of the state's geography. We offer dedicated neonatal and pediatric transport and are a base hospital for LifeFlight of Maine, a critical care air transport service flying nearly 900 missions per year.

Physicians at Northern Light Eastern Maine Medical Center enjoy:

- A robust compensation and benefits package
- Student Loan Reimbursement Programs
- Relocation and Sign-On Bonuses
- Generous PTO Benefits

Bangor is an award-winning small city offering easy access to our ocean and mountains. Acadia National Park, Baxter State Park, and premier Northeast ski resorts provide outstanding four-season outdoor recreation. Area schools rank among New England's best. The flagship campus of the University of Maine is in neighboring Orono. Bangor serves as the regional hub for medicine, the arts, and commerce. Bangor International Airport offers direct and one-stop service to most major destinations.

For confidential consideration, please contact:
Amanda Klausing, CPRP,
Provider Recruiter:
E-mail ProviderJobs@northernlight.org
Phone 207/973-5358

PEDIATRIC NEUROLOGIST

Maine Medical Partners Neurology has a full-time opening for a board certified/eligible pediatric neurologist to join our well-established neurology division which consists of 5 pediatric neurologists, 19 adult neurologists, and 9 nurse practitioners, with on-site MRI and neurodiagnostic lab.

The neurologists in our practice have a variety of clinical and subspecialty interests. Clinical interest in the care of patients with neuromuscular disease and/or spasticity is encouraged, but not required.

The practice works closely with our Neuroscience Institute to further develop Neuroscience Centers of Excellence in support of our stroke, epilepsy, movement disorders, MS programs, and pediatric neurology specialty clinics including Muscle Dystrophy Association clinic, Spinal Bifida clinic, and Cerebral Palsy clinic. Research interests are supported through Maine Medical Center Research Institute.

The Barbara Bush Children's Hospital, a 96-bed hospital within Maine Medical Center, is the tertiary medical center for children serving the state of Maine and portions of New Hampshire. Medical staff represent all the pediatric medical and surgical subspecialties that provide comprehensive services for children, including a PICU, NICU, dedicated pediatric ED, and a 35 bed inpatient unit.

Maine Medical Center has 637 licensed beds and is the state's leading tertiary care hospital and Level 1 Trauma Center, with a full complement of residencies and fellowships, and integration with Tufts University Medical School. Candidates will have the opportunity to teach medical students from multiple universities as well as residents in adult neurology, general pediatrics, and child psychiatry training programs. Call coverage is 1 in 5 for the primarily consultative service, with support from pediatric residents.

The successful candidate will be employed by Maine Medical Partners (MMP), a subsidiary of Maine Medical Center and Maine's largest multi-specialty group. MMP serves the health care needs of patients throughout Maine and Northern New England.

Situated on the Maine coast, Portland offers the best of urban sophistication combined with small-town friendliness. The area provides four season recreational opportunities, such as skiing, hiking, sailing, and miles of beautiful beaches. Just two hours north of Boston, this is an exceptionally diverse and vibrant community. MaineHealth values diversity and is an Equal Opportunity/Affirmative Action employer.

For more information, please contact Gina Mallozzi, Physician Recruiter, at (207) 661-2092 or gmallozzi@mainehealth.org

CNS PERSONNEL REGISTRY

MICHIGAN

MICHIGAN MEDICINE PEDIATRIC EPILEPSY FACULTY POSITIONS

The Michigan Medicine Department of Pediatrics (University of Michigan) is seeking two board-certified/board-eligible Pediatric Epileptologists to join the Pediatric Epilepsy Program in the division of Pediatric Neurology. Major clinical responsibilities will include direct patient care, as well as EEG interpretation.

The Pediatric Epilepsy Program at Michigan Medicine is certified by the North American Epilepsy Centers as a Level IV center. The program provides cutting edge, comprehensive epilepsy care including advanced medical and dietary therapies, scalp EEG monitoring, grids and stereo-EEG, epilepsy surgery, responsive neurostimulation, deep brain stimulation, and access to clinical and bench research.

The Pediatric EEG Laboratory opened in 2011, in conjunction with the new C.S. Mott Children's Hospital. Since then, patient volumes have increased significantly across all aspects of the Epilepsy program: continuous EEG monitoring studies have grown by 12-15% each year with current volume ~1400/year. We have a dedicated inpatient Pediatric Epilepsy inpatient service that is staffed by Pediatric Epilepsy Nurse Practitioners and the Epilepsy faculty. We have one of the largest ketogenic diet programs in the USA with dedicated support from three full-time ketogenic dietitians. Other support staff include nurses, pharmacists, social workers, and administrative staff.

We provide continuous EEG monitoring for patients in the neonatal, pediatric, and cardiac intensive care units, in addition to consult patients on the general care pediatric services and in the pediatric emergency department. EEG monitoring can be performed in every room in the hospital. Our large EEG technical staff provides 24/7 in-house EEG technologists.

We offer outpatient clinic and EEG services at two outreach locations in Southeast Michigan, in addition to the Mott Hospital site. The Pediatric Epilepsy program was the first of its kind to develop Telemedicine services for Pediatric Epilepsy. Telemedicine capability has grown exponentially over the last year, and has excellent support from a dedicated Virtual Care team.

Our comprehensive pediatric epilepsy surgery program provides state-of-the-art evaluation and treatment for children with pharmacoresistant epilepsy. We offer Phase 1 and Phase 2 surgical evaluations, intracranial EEG monitoring, focal resections, callosotomy, hemispherectomy and responsive neurostimulation. The number of epilepsy surgery cases has grown dramatically over the last five years.

The Pediatric Epilepsy Program currently has 9 board-certified pediatric epileptologists. We enjoy a close, collegial relationship with the Michigan Medicine Adult Epilepsy program. We have a large Epilepsy fellowship program that is run jointly with Adult Epilepsy. Several faculty members have robust research careers with NIH, PCORI, HRSA, and foundation support. We are actively involved as leaders of the Pediatric Epilepsy Research

MICHIGAN continued

Consortium and the Pediatric Epilepsy Learning Healthcare System. Our clinical research team is supported by five full-time research coordinators.

Our thriving program has outstanding regional and national reputations. C. S. Mott Children's Hospital is consistently ranked as the #1 Children's Hospital in Michigan. We are looking for clinical epileptologists to join this exceptional team.

Required Qualifications:
The candidate must have an MD or DO degree, be fellowship-trained in Epilepsy or Clinical Neurophysiology, be board-certified or board eligible in Neurology, with special qualification in Child Neurology, as well as added qualifications in either Epilepsy or Clinical Neurophysiology, and will hold or have the ability to obtain the appropriate medical licenses in the State of Michigan.

For individuals with appropriate training, skills, and interest, there are opportunities to develop a clinical or basic science research program.

The ideal candidate will have excellent clinical skills in general pediatric neurology and pediatric epilepsy and will be expected to participate in all aspects of the established Pediatric Epilepsy program. This will include inpatient Epilepsy patient care and continuous EEG reading, outpatient clinic, and reading routine EEGs. The clinic will include Epilepsy clinic, staffing residents, Epilepsy fellows, and nurse practitioners. Off-site clinics will also be encouraged.

This position is posted as Clinical Instructor/Clinical Assistant Professor/ Clinical Associate Professor/Clinical Professor. Rank of selected candidate is dependent upon qualifications.

The University of Michigan, the Department of Pediatrics, and the Division of Pediatric Neurology are committed to having our staff and faculty represent a breadth of perspectives to better serve both our patients and the University community. Therefore, Michigan Medicine seeks to recruit and retain a diverse workforce as a reflection of our commitment to serve the diverse people of Michigan and to maintain the excellence of the University. We welcome applications from anyone who would bring additional dimensions to the University's research, teaching, and clinical mission, including women, members of minority groups, protected veterans, and individuals with disabilities. The Department of Pediatrics, like the University of Michigan as a whole, is committed to a policy of nondiscrimination and equal opportunity for all persons and will not discriminate against any individual because of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status. The University of Michigan is an Equal Employment Opportunity/Affirmative Action Employer.

COVID-19 vaccinations are now required for all University of Michigan students, faculty and staff across all three campuses, including Michigan Medicine, by the start of the fall term on August 30, 2021. This includes those working or learning remotely. More information on this policy is available on the Campus Blueprint website or the U-M Dearborn and U-M Flint websites.

Interested physicians should send their personal statement and CV to:
Steven Leber, MD, PhD
Division Director, Pediatric Neurology
12-733D Mott Children's Hospital
Ann Arbor, MI 48109-4279
Tel: 734/936-4179
Email: leber@med.umich.edu

CNS PERSONNEL REGISTRY

MINNESOTA

PEDIATRIC NEUROLOGIST

The Department of Neurology is seeking a Board Certified/Board Eligible Neurologist to join the Division of Child and Adolescent Neurology. Emphasis is given to those individuals with expertise in Headache, Neonatal Neurology and Hospital Practice.

The Department of Neurology includes nearly 100 board certified neurologists and 12 child neurologists, offering highly skilled, state-of-the art neurological care.

The Division of Child and Adolescent Neurology is seeking an individual with a strong interest in clinical practice with a subspecialty focus and a track record, or high potential, of academic success in research or education within these areas. The candidate must demonstrate strong interpersonal skills and capacity to work collaboratively.

Candidates must be an M.D. or D.O. (or foreign equivalent) with a Minnesota license or eligibility for a Minnesota license. Candidates must be APBN board certified in Neurology. Mayo Clinic is located in the heart of downtown Rochester, Minnesota, a vibrant, friendly city that provides a highly livable environment for more than 34,000 Mayo staff and students. The city is consistently ranked among the best places to live in the United States because of its affordable cost of living, healthy lifestyle, excellent school systems and exceptionally high quality of life.

Contact:
Mayo Clinic
https://ars2.equest.com/?response_id=5dd79bdedef7bf46b73a453776271f04

CNS PERSONNEL REGISTRY

NEVADA

PEDIATRIC NEUROLOGIST

Exciting opportunity to help grow the only pediatric neurology practice in town!

Due to expansion, we are seeking a 4th BC/BE pediatric neurologist to join a successful, well-established group providing pediatric neurology services to Las Vegas and surrounding communities for nearly 25 years. In addition to serving patients through local offices, the practice provides pediatric neurology services to three regional hospitals including Sunrise Children's Hospital, Mountain View Hospital and University Medical Center of Southern Nevada. The practice is supported by a pediatric nurse practitioner, EEG techs and medical assistants.

Las Vegas offers a multitude of opportunities to live, work and play. The splendor of the desert provides a breathtaking backdrop for the outdoor enthusiast to enjoy activities such as golfing, skiing, snowboarding and water sports. The area is home to 357 public schools along with over 40 large private schools; The University and Community College System of Nevada (UCCSN) is a leader in higher education. With a wide range of housing choices you will find the community that is perfect for you and your family – from family-

friendly neighborhoods, master-planned communities, high-rises, condominiums, golf communities, urban and suburban options – there is something for everyone. The cost of living is affordable and there is no state income tax. For the sports enthusiasts, Las Vegas is home to the Las Vegas Raiders and the Las Vegas Golden Knights.

Benefits:
Our clinicians enjoy a competitive compensation package with many locations offering sign on bonuses, relocation and tuition reimbursement.

Our benefits include:
- Health (various options), life, vision, dental and disability insurance
- 401(k) with annual matching program
- Advanced and continuing medical education
- Leadership training and advancement opportunities
- Employee stock purchase plan at a 15% discount
- Professional liability insurance
- Support and payment for mandatory license/s and hospital credentialing
- These benefits are for full time employees, employees in other types of employment classifications may be eligible for some of these benefits.

Mednax Services, Inc. is a national medical group. Over the last 40 years, through our network of over 3,500 clinicians in 39 states and Puerto Rico, we have reshaped care delivery within women's and children's specialties and subspecialties. Our clinical teams care for the unique population of high-risk pregnancies and critically ill infants and children in both hospital and ambulatory clinical settings. Over the years, clinicians practicing as part of Pediatrix™ and Obstetrix™ Medical Groups have used evidence-based tools, continuous quality initiatives, clinical research, and telemedicine to enhance patient experience, outcomes and provide high-quality, cost-effective patient care. Our nationwide team of almost 8,000 employees, including physicians, advanced practitioners, clinical leaders, business and operational experts, work together every day to fulfill our mission to take great care of the patient®. We invite you to join the Mednax family and help shape the future of health care.

MEDNAX is an Equal Opportunity Employer

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

Apply Here: https://www.click2apply.net/wyVbNQfNrxKqFmDVTgWJJ

PI14306516

CNS PERSONNEL REGISTRY

NEW MEXICO

PEDIATRIC NEUROLOGIST

The Presbyterian Children's Service Line encompasses both inpatient and outpatient services for specialty pediatric care, including a 21 bed PICU; a 56 bed NICU; and a 36-bed Pediatric Unit. We have pediatric intensivist, neonatologist and pediatric hospitalist service in-house 24/7. Our pediatric subspecialties include cardiology, pediatric cardiovascular surgery, neurology, endocrinology, surgery, ENT, pulmonology, gastroenterology, hematology and oncology, feeding and development, chronic care, infectious disease, nephrology, and radiology.

We are seeking a BC/BE Pediatric Neurologist to join our rapidly growing practice.

What We're Offering:
- Join an established, multi-specialty medical group
- A collegial work environment with easy access to well-qualified specialists
- Enjoy all of New Mexico's beauty and lifestyle
- Nationally competitive salary
- Comprehensive benefits package

Practice Highlights

- Excellent Support from inpatient teams
- Ability to Influence the growth of the program.
- Practice integrated in a thriving multispecialty clinic setting
- System-Wide EPIC EMR

What We're Seeking:
- Must be BC/BE in Pediatric Neurology
- Outstanding patient care qualities, highly motivated with an interest to grow their practice
- Patient-focused and willing to collaborate and work in a team environment
- Ability to obtain an NM medical license

Presbyterian invites you to get a glimpse of what it's like to work at Presbyterian.

Please contact Susan Camenisch at 505/923-8718 or by email at scamenisc@phs.org for more details.

AA/EOE/VET/DISABLED. PHS is a drug-free and tobacco-free employer with smoke-free campuses.

CNS PERSONNEL REGISTRY

NEW YORK

PEDIATRIC NEUROLOGIST

Morristown Medical Center-the # 1 Hospital in NJ (*U.S News& World Report*) is seeking an experienced Pediatric Neurologist to join our team at Goryeb Children's Hospital. The successful candidate will be an energetic clinician and strong educator who is highly collegial, innovative and patient-centered. Goryeb Children's Hospital ranked (UHC) in the top 10% of children's hospitals nationally for pediatric quality and safety, serving 5 million population area across 11 counties in New Jersey.

The board-eligible/certified child neurologist will join our team of four neurologists and well as three epileptologists in our top ranked epilepsy program (NAECNAEC Level 4 designation).With exceptionally strong programs in genetics, neurodevelopmental/autism (four neurodevelopmental pediatricians), neuro-oncology physician, headache physician, neuromuscular physician and four pediatric neurosurgeons operating in our facilities, we see a broad array of pediatric neurological conditions.

This is the largest consolidated neurology and child development division in New Jersey and is led by Dr. Bernard Maria, 2018 Hower Award recipient, the highest honor in pediatric neurology.

We are confident that you will find success within the Atlantic Health System, which has been named for the 12th year in a row to Fortune's "Top 100 Best U.S. Companies to Work For" list. Here, you will find a collaborative culture.

Extraordinary benefits – Generous Paid Time off, Competitive Compensation, Continuing Education benefits.

NEW YORK continued

Historic Morristown is a vibrant and upscale suburb with direct access to New York City.

Please contact:
Lori Velasco at Lori.Velasco@atlantichealth.org

For additional details or apply online at:
https://careers-atlantichealth.icims.com/jobs/43957/pediatric-neurologist/job?mode=view&mobile=false&width=756&height=500&bga=true&needsRedirect=false&jan1offset=-300&jun1offset=-240

CHILD NEUROLOGY OPPORTUNITY

The Department of Neurology at Albany Medical College seeks BC/BE Neurologists to expand the Division of Pediatric Neurology. Applicants with an interest in general child neurology as well as those with fellowship training in epilepsy to expand the services offered by our comprehensive epilepsy center are both welcome. Albany Medical Center, the only academic medical center in northeastern New York, is a private, non-profit organization serving over 3 million people. The Department of Neurology has established programs in epilepsy, dementia, movement disorders, neuromuscular disease, pediatric neurology, pain management and stroke/neurocritical care. Successful applicants will have a commitment to patient care and supervision of medical students and residents, and a desire to work in a collaborative environment with neurology and pediatric colleagues.

Albany Medical College is part of Albany Medical Center, northeastern New York's only academic health sciences center, which includes Albany Medical Center Hospital, one of upstate New York's largest teaching hospitals. Located at the heart of New York's Capital Region, Albany is a culturally and environmentally diverse area. The Capital Region offers great opportunities for professionals and families.

Please send inquiries and a C.V. to:
Valerie D'Aloia
Physician Recruitment Coordinator
Albany Med Faculty Physicians
518/262-1333
Fax: 518/262-6996
daloiav@mail.amc.edu

To learn more about the capital region please visit www.amc.edu/greatplace

Albany Medical College is a private institution and a non-discriminatory AA/EOE (minorities and women are encouraged to apply).

ACADEMIC CHILD NEUROLOGIST

SUNY Upstate Medical University is seeking BE/BC Child Neurologists to join its expanding Pediatric Neurology Division.

SUNY Upstate Medical University is the only academic medical center in Central New York, an area encompassing a population of 2 million people. New faculty members are offered the opportunity to build a clinical practice, engage in collaborative research and provide instruction to neurology residents, students and fellows. The institution has selected Neuroscience as a priority in its most recent strategic plan. Of note, the College of Medicine began as Geneva Medical College in Geneva, New York and has the distinction of graduating Dr Elizabeth Blackwell, the first woman physician of the modern era (1849).

Golisano Children's Hospital is the major pediatric referral center for Central New York State, much of the southern tier of New York State, and parts of northern New York State extending to the Canadian border. There is an opportunity to care for a diverse population of children with neurological problems.

Pediatric Neurology Practice Highlights:
- Collaborate with the departments of Neurosurgery and Pediatrics
- Provide instruction to medical students as well as Neurology residents and fellows
- Engage in clinical or bench research
- Join a growing pediatric neurology team supported by APPs, dedicated nurses and support staff
- On-site Children's Hospital featuring an EMU suite and support services for families

The Neurology Medical Service Group (MSG) is a private, physician-run practice. Competitive compensation plans are available comprised of funds from both the MSG and the state. As a result, physicians are eligible for state benefit and retirement plans.

Our region offers cultural resources and convenient access to the Finger Lakes Region and the Adirondack Mountains.

The Central New York area is consistently ranked in the top 50 places to live by *U.S. News & World* based on an affordable cost of living and highly ranked school system. The area is culturally rich and diverse with a variety of entertainment and recreational activities. Our central location in the Northeast puts New York City, Philadelphia, Boston and the Canadian cities of Toronto, Montreal and Ottawa within a four-hour drive.

For further information, contact Ai Sakonju, Chief of Pediatric Neurology Division (sakonjua@upstate.edu) and Tina Gilman (gilmant@upstate.edu).

To apply: www.upstate.edu/jobs

SEEKING PEDIATRIC NEUROLOGISTS FOR NORTHWELL HEALTH

The Division of Pediatric Neurology at the Steven and Alexandra Cohen Children's Medical Center of New York has an opening for two BC/BE Pediatric Neurologists with strong clinical skills in Pediatric Neurology to join our team. Candidates with additional expertise in neonatal neurology, or headache are particularly encouraged to apply.

The Division of Pediatric Neurology is comprised of 12 Pediatric Neurologists, 4 NPs, two social workers, a neuropsychologist, one research assistant, and a ketogenic diet specialist, and has an ACGME-approved residency training program (two per year). It also has an ACGME approved pediatric epilepsy fellowship training program (one per year). Faculty also participate in the curriculum of the General Pediatric Residency Training Program. We offer a robust clinical and scholastic experience in a family centered region of New York. We have a dedicated 10 bed neuroscience unit (Level 4 NAEC) for our surgical patients, and perform stereoEEG assisted by our robot ROSA. We also have a three bed sleep lab. We have opportunities in multiple locations across the metropolitan region. We oversee 40,000 deliveries per year in the Northwell Health system. Faculty have appointments at Zucker School of Medicine at Hofstra/Northwell. We have an active research program with intramural and extramural funding, and ongoing several drug studies.

The Steven and Alexandra Cohen Children's Medical Center (CCMC) is the largest pediatric teaching hospital in

the New York metropolitan region. It is the tertiary pediatric medical center of Northwell Health and it is the only Level-1 Pediatric Trauma Center on Long Island. Today, it is the largest pediatric teaching hospital in the region, treating over 230,000 children per year and serving 1.8 million children in Brooklyn, Queens, Nassau, and Suffolk counties. CCMC is committed to a center of excellence in pediatric neurology including a newly renovated Epilepsy Monitoring Unit (NAEC level 4) opened in 2016. We are proud to have been selected as one of "America's Best Children's Hospitals" by *US News & World Report* for 10 years in a row.

Northwell Health has 23 hospitals and more than 750 outpatient locations throughout the Metro New York area and beyond, Northwell Health serves over 11 million people and is one of the largest and most diverse academic medical centers in the nation. In addition to the renowned tertiary clinical resources that we offer, our faculty also enjoys access to the scholastic and research resources of the Feinstein Institute for Medical Research and strategic affiliation with the nationally renowned Cold Spring Harbor laboratory. No matter where you choose to live, from the family-centered suburbs of Long Island to the glitter and buzz of Manhattan to the serene beauty of the Atlantic coast, the New York metropolitan area offers something for everyone.

If you choose to join us, you will find not only a great career opportunity, but also great lifestyle options. An academic appointment at The Zucker School of Medicine at Hofstra/Northwell is commensurate with experience. Northwell is proud to offer a highly competitive salary and generous benefits package.

For further information and to apply, please email: OPR@northwell.edu, or contact Dr. Sanjeev Kothare, Division Director for Child Neurology, skothare@northwell.edu

EOE M/F/D/V

CNS PERSONNEL REGISTRY

OHIO

PEDIATRIC NEUROLOGIST

Academic Pediatric Neurologist Opportunity, Cleveland, Ohio

The Division of Pediatric Neurology and Epilepsy at University Hospitals Rainbow Babies & Children's Hospital in Cleveland Ohio is recruiting for a Pediatric Neurologist at the assistant professor level. The Pediatric Neurologist will provide clinical care to children with complex neurological disorders working closely with a dynamic team of pediatric neurologists and epileptologists. Clinical activities will be carried out at Rainbow Babies & Children's ambulatory and inpatient sites, and at University Hospitals' outpatient clinics. The Pediatric Neurologist will be encouraged and supported to engage in investigation/research and scholarly activities. Opportunities exist to conduct research in a variety of areas including clinical and translational research, education, outcomes/quality improvement, and medical informatics. There is infrastructure and support for clinical and translational research both within the Division and within the Department of Pediatrics. In addition to clinical service and research responsibilities, there is an expectation for academic work including education, administration/service, as well as advocacy.

Qualified candidates must be Board Eligible/Board Certified in Pediatric Neurology. The selected candidate will receive a faculty appointment at Case Western Reserve University School of Medicine at the academic level commensurate with experience and qualifications.

University Hospitals offers a competitive salary and benefits program and productivity incentives. The Department offers faculty development and mentoring program designed to help faculty succeed in translational or basic research.

The Cleveland area offers an incredible quality of life with a growing economy, rich cultural scene with ballet, theatre, symphony, opera and museums, outstanding restaurants, and a moderate cost of living. The city is well-known for its sports teams and incredible metro park system for any outdoor enthusiast. To learn more about Cleveland, Ohio, visit http://www.thisiscleveland.com/

Interested individuals can apply for the position by sending their cover letter and curriculum vitae to Asim Shahid, MD at Asim.Shahid@UHHospitals.org. For additional information about the position, please contact him by email at Asim.Shahid@UHHospitals.org.

Rainbow Babies &Children's Hospital is a patient focused center distinguished by collaboration, excellence, leadership, and respect. We value candidates who are committed to fostering and furthering the culture of compassion, collaboration, innovation, accountability, diversity, integrity, quality, and trust that is integral to our mission To Heal. To Teach. To Discover

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CHILD NEUROLOGIST OPPORTUNITIES – NORTHEAST OHIO

Ohio-based Akron Children's Hospital seeks three Child Neurologists to join its expanding Division. Akron Children's Hospital is the largest pediatric healthcare system in Northeast Ohio and is ranked among the best children's hospitals by *US News and World Report*.

This integrated healthcare delivery system includes:

- Two free-standing pediatric hospitals
- More than 8,000 providers, who manage 1,000,000+ patient visits annually
- A network of more than 60 primary and specialty care locations

The successful candidate will join a dedicated team of thirteen child neurologists and fifteen nurse practitioners who provide services in the Hospital's NeuroDevelopmental Science Center. The Center brings together six pediatric specialties – Developmental-Behavioral Pediatrics, Neurology, Neurosurgery, Physiatry, Neuropsychology and Psychology in one physical and functional unit to deliver the best outcomes and quality of life for patients.

Locations available:

- Akron, OH
- Boardman, OH
- Lorain, OH

These positions offer opportunities for:

- Joining an established team of neurologists, affording exceptional work-life balance.

OHIO continued

- Active involvement in medical student and resident education; academic appointment at Northeast Ohio Medical University is available and commensurate with experience
- Research and innovation through the Rebecca D. Considine Research Institute and local universities
- An attractive compensation and benefit package

Requirements include MD or DO degree, board eligibility/certification in Child Neurology and the ability to obtain an active medical license and DEA license in the state of Ohio.

Akron Children's Hospital is set in the beautiful Cuyahoga Valley, just minutes south of Cleveland. From major league attractions to small-town appeal, the greater Akron area has something for everyone. The area is rich in history and cultural diversity, and provides a stimulating blend of outstanding educational, cultural and recreational resources. This four-season community will have outdoor enthusiasts thrilled with over 40,000 acres of Metro Parks for year-round enjoyment. Northeast Ohio has become a premier destination to work, live, play, shop and dine!

Interested candidates may contact Jane Hensley, Physician Recruiter at 330-543-3015 or jhensley@akronchildrens.org. To learn more, visit our website at www.akronchildrens.org.

EOE/AA Minorities/Females/Protected Veterans/Disabled.

CNS PERSONNEL REGISTRY

TEXAS

CHILD NEUROLOGY NEUROMUSCULAR OPPORTUNITY

Cook Children's Medical Center and Health Care System, located in Ft. Worth, TX, has initiated a national search for a board certified/board eligible child neurologist with subspecialty training in clinical neuromuscular medicine and electrophysiology.

Cook Children's Medical Center is a not-for-profit, free standing, 443-bed quaternary care pediatric hospital that is consistently ranked by *US News and World Report*. Although our primary focus is family-centered clinical care, research is an important program component supported by a multi-million-dollar Neuroscience Research Endowment providing robust infrastructure for protocol development, data acquisition, analysis, and dissemination. Opportunities for teaching and faculty affiliation with the University of North Texas Health Science Center and Texas Christian University Medical Schools are also possible.

Cook Children's is committed to securing a neuromuscular specialist whose professional, social, and economic interests would lend themselves to a long-term, cultural fit within the institution, the medical staff, and the community. The candidate will join a multi-disciplinary team dedicated to improving the care of children in our region through cutting edge therapies, investigational studies, and comprehensive care.

Other Programmatic Highlights:

- Joining a comprehensive, multidisciplinary neuroscience group that includes:
- 18 Pediatric Neurologists (2 neuromuscular specialists)
- 8 Advanced Practice Providers
- 4 Pediatric Neurosurgeons
- 3-Neuropsychologists
- Physical Medicine and Rehabilitation
- MDA Clinical Care Center
- Enjoy strong collaborative relationships including: orthopedic surgery, physical medicine, pain management, palliative care, pulmonology, cardiology, and endocrinology
- Clinics incorporate rehabilitation therapists, social workers, nutritionists and child life specialists
- Treatment offerings include the full range of disease-modifying therapies with active involvement in ongoing clinical trials
- Fully integrated 3D motion analysis laboratory
- Direct access to a 26-bed state-of-the-art Neuro-Rehabilitation unit located next to the Neurosciences offices
- Enjoy an average of 4 call weekends per year and 2-3 weekday calls per month
- Earning potential above the 90th percentile of MGMA
- A busy program that sees more than 33,000 patient encounters annually
- Established programs of excellence in epilepsy, movement disorders, headache, stroke, neuromuscular disorders, and a newly established mitochondrial clinic

Visit our website at: https://cookchildrens.org/neurology/Pages/default.aspx

Minimum qualifications:
Candidate must have completed an accredited pediatric specialty training program and be board certified/board eligible in child neurology with subspecialty training in clinical neuromuscular disorders. All members of the department continue to practice some general neurology in addition to their chosen subspecialty with adequate time allotted to continue growing our neuromuscular program. Must be qualified to obtain an unrestricted Texas Medical License before commencing employment.

Cook Children's is an EOE/AA, M/F/Disability/Vet.

Contact:
Debbie Brimer
debbie.brimer@cookchildrens.org

CHILD NEUROLOGY OPPORTUNITY: MOVEMENT DISORDERS

Cook Children's Medical Center and Health Care System, located in Ft. Worth, TX, has initiated a national search for a board certified/board eligible child neurologist with demonstrated special interests in pediatric movement disorders to join an internationally recognized program encompassing expertise in dystonia, cerebral palsy, ataxia, and other complex movement disorders.

Cook Children's Medical Center is a not-for-profit, free standing, 443-bed quaternary care pediatric hospital that is consistently ranked by *US News and World Report*. Although our primary focus is family-centered clinical care, research is an important program component supported by a multi-million dollar Neuroscience Research Endowment providing robust infrastructure for protocol development, data acquisition, analysis, and dissemination. Opportunities for teaching and faculty affiliation with the University of North Texas Health Science Center and Texas Christian University Medical Schools are also possible.

Cook Children's is committed to securing an individual whose professional, social, and economic interests would lend themselves to a long-term, cultural fit

within the institution, the medical staff, and the community. The candidate will join a multi-disciplinary team dedicated to improving the care of children in our region through cutting edge therapies, investigational studies, and comprehensive care.

Other Programmatic Highlights:
- Joining a comprehensive, multidisciplinary neuroscience group that includes:
- 18 Pediatric Neurologists including 3 movement specialists
- 8 Dedicated Advanced Practice Providers
- 4 Pediatric Neurosurgeons
- 3 Neuropsychologists
- Physical Medicine and Rehabilitation
- First hospital in the country to establish dedicated Pediatric DBS program and to have Clearpoint Intraoperative iMRI system
- More than 150 children have benefited from DBS in our program
- Founding members of the PEDiDBS registry with significant involvement in multi-center research collaborations
- We offer a full spectrum of advanced therapeutic options for treating cerebral palsy and other complex movement disorders including chemodenervation, intrathecal therapies, rhizotomy and deep brain stimulation.
- Multi-disciplinary clinics devoted to the care of children with complex movement disorders including cerebral palsy and dystonia
- Consultative collaboration within Tourette syndrome program
- Strong multidisciplinary relationships including orthopedic surgery, physical medicine, pain management, and palliative care.
- Clinics incorporate rehabilitation therapists, social workers, nutritionists and child life specialists
- Fully integrated 3D motion analysis laboratory
- Collaboration with our translational neuroscience research program
- Direct access to a 26-bed state-of-the-art Neuro-Rehabilitation unit located next to the Neurosciences offices
- Shared call requiring on average 4 call weekend per year and 2-3 weekday calls per month
- Earning potential above the 90th percentile of MGMA
- A busy program that sees more than 33,000 patient encounters annually
- Established programs of excellence in epilepsy, movement disorders, headache, stroke, neuromuscular disorders, and a newly established mitochondrial clinic

Visit our website at: https://cookchildrens.org/neurology/Pages/default.aspx

Minimum qualifications:
Candidate must have completed an accredited pediatric specialty training program and be board certified/board eligible in child neurology with demonstrated interests in pediatric movement disorders. All members of the department practice some general neurology in addition to their chosen subspecialty.

Must be qualified to obtain an unrestricted Texas Medical License before commencing employment.

Cook Children's is an EOE/AA, M/F/Disability/Vet.

Contact:
Debbie Brimer
debbie.brimer@cookchildrens.org

DEVELOPMENTAL – BEHAVIORAL PEDIATRICS OR NEURODEVELOPMENTAL PEDIATRICS FACULTY OPPORTUNITY

On behalf of the Cook Children's Health Care System (CCHCS) located in Ft. Worth, Texas, CareerPhysician, a national leader in child health faculty and leadership recruitment, is pleased to inform you of a national search for outstanding candidates for openings in Developmental-Behavioral Pediatrics or Neurodevelopmental Pediatrics. We believe these faculty openings to be among the best career opportunities currently available in the US in Developmental and Behavioral Pediatrics.

CCHCS is a not-for-profit, nationally recognized pediatric health care organization comprised of a Medical Center, Physician Network, Home Health company, Pediatric Surgery Center, Health Plan and Health Foundation. Cook Children's Medical Center is a freestanding 443-bed quaternary care pediatric hospital that is consistently ranked by *US News and World Report*. The integrated system has more than 60 primary and specialty care offices throughout North and West Texas, serving a 23-county referral network. The Cook Children's Physician Network is the largest pediatric multi-specialty physician group in its service area with over 600 employed specialty and primary care providers.

Key Opportunity Highlights:
- Seeking candidates, including 2022 fellows, with interest in joining a thriving Developmental-Behavioral practice that is supported by the more than 300 referring members of the Cook Children's Physician Network.
- Enjoy strong interdisciplinary collaboration and support from related specialties, special education, applied behavioral analysis, child psychiatry and psychology.
- New innovative clinic space currently under design and construction that will facilitate the groups innovative collaboration as part of the Cook Children's Neuroscience Institute and Child Study Center.
- One of the Nation's only programs with an accredited school dedicated to children with developmental and learning disabilities. The Jane Justin School enrolls students between the ages of 3 and 21 and has been a pillar of education in the community for more than 20 years.
- Clinical research in your areas of interest is encouraged and supported through the CCMC IRB and grant writing office, but not required.
- Nationally recognized pediatric sub-specialty platform with 35 departments and more than 40 outpatient primary care clinics.
- Highly competitive compensation and benefits package, no state income tax, and a strong economy in one of the fastest growing areas of the United States.

For more details about this opportunity, or if you would like to recommend an individual(s) who exemplifies the qualities we are seeking in a candidate, please contact Marcel Barbey at marcel@careerphysician.com, or at 817/707-9034. All interactions will remain confidential, and no inquiries will be made without the consent of the applicant.

Cook Children's Health Care System is committed to equal opportunity for all persons regardless of age, color, disability, ethnicity, marital status, national origin, race, religion, sex, sexual orientation, veteran status or any other status protected by law.

PEDIATRIC NEUROLOGY – FACULTY OPPORTUNITIES

The University of Texas Medical Branch (UTMB), Department of Pediatrics, Division of Pediatric Neurology is seeking two full time Board Certified/Board Eligible Pediatric Neurologists to join our faculty.

The University of Texas Medical Branch - UTMB Health is a multibillion-dollar health science center comprised of four schools, three institutes and over 10 exceptional research centers. UTMB was the first academic health center in Texas and is home to the state's first schools of medicine, nursing, and allied health sciences. For 125 years, the university has maintained a forward-thinking spirit serving its students, its patients, and the people of Texas.

UTMB's Division of Pediatric Neurology - UTMB Children's Hospital currently has 24 pediatric beds, 4 PICU beds, and 42 Level 4 NICU beds. We have over 15 pediatric subspecialties in the department and coordinate closely between specialties. In our mainly outpatient service, we evaluate and treat a broad spectrum of patients with a full range of childhood neurologic complaints. We also provide mainly consult services to the inpatient Pediatrics teams, with the opportunity for additional inpatient presence at the neurologist's discretion. There is a focus on education of medical students and residents, including full-time presence of learners in clinic and the opportunity for didactic teaching.

Faculty Pediatric Neurologist - This position offers excellent opportunities for patient care, teaching, and program development. There is ample opportunity for growth due to our newly expanded Children's Hospital Unit which opened in late 2020. This expansion doubled our inpatient capacity and offers a dynamic opportunity for faculty career growth and development. Selected candidates must be board certified or board eligible in both Pediatrics and Neurology, and they must also be able to obtain a valid Texas state medical license.

UTMB attracts patients mainly from the coastal and East Texas regions. We have a robust community-based clinic system that provides an abundance of referrals for a variety of neurologic complaints.

Income Package: Rank and salary will be competitive and commensurate with training and experience. The position offers excellent opportunities for patient care, teaching, and program development. Additional benefits include a relocation allowance, a superior family benefits program and an unsurpassed retirement program.

Living in South Houston and Galveston, Texas: Galveston Island is home to approximately 50,000 residents and is known for its 32 miles of Gulf Coast beaches, temperate climate, wide array of leisure and cultural activities, and affordable cost of living – all just south of Houston, the 4th largest city in the US. More information about UTMB and Galveston can be found on the UTMB Living Website: http://www.utmb.edu/utmbliving/

Interested candidates should submit a current/updated Curriculum Vitae (CV) via email to: Skott Harrington, saharrin@utmb.edu. Please be sure to include a preferred contact method.

UTMB Health strives to provide equal opportunity employment without regard to race, color, national origin, sex, age, religion, disability, sexual orientation, gender identity or expression, genetic information, or veteran status. As a VEVRAA Federal Contractor, UTMB Health takes affirmative action to hire and advance women, minorities, protected veterans, and individuals with disabilities.

PEDIATRIC NEUROLOGIST

Pediatric Neurologist ~ Austin, Texas

Join the largest Pediatric Neurology practice in Central Texas. Ten Child Neurologists comprise our private practice, Child Neurology Consultants of Austin (CNCA), including fellowship-trained specialists in Epilepsy/Neurophysiology (4) and Neuromuscular Disease. We are currently seeking additional motivated, well-trained and collaborative Pediatric Neurologists.

Applicants must have graduated from an ACGME accredited Pediatric Neurology training program and have well-rounded clinical experience. Additional fellowship training in epilepsy or other subspecialty experience is a plus but is not required. Individuals accepted for these positions will have full-time clinical responsibilities and also opportunities for program development in an area of specialty interest, clinical research or academic/educational endeavors.

Our practice has affiliations with Dell Children's Medical Center (DCMC), the only freestanding pediatric hospital in the region, North Austin Medical Center (NAMC) and Texas Children's Hospital (TCH) in Houston. CNCA physicians hold clinical appointments with the Departments of Pediatrics and Neurology and serve as the primary teaching faculty at Texas A&M.

CNCA also supports St. David's Children's Hospital, an HCA facility, in north Austin. They offer a dedicated Children's ED, a children's wing along with 2 EMU beds. This is a new facility but is rapidly growing and expanding its range of services. In both hospital systems, we support the NICUs at multiple sites, and we are proud partners with the community of physicians in Austin and the surrounding areas.

While not in the hospital or clinic, our physicians enjoy everything that the city of Austin has to offer. Austin is the 11th largest city in the country, and it is consistently ranked as having the highest quality of life of any large American city. Austin is a vibrant high-tech hub and university town that is known for its live music, hike and bike trail system, and international festivals such as South by Southwest and Austin City Limits.

Benefits:
Our clinicians enjoy a competitive compensation package with many locations offering sign on bonuses, relocation and tuition reimbursement.

Our benefits include:
- Health (various options), life, vision, dental and disability insurance
- 401(k) with annual matching program
- Advanced and continuing medical education
- Leadership training and advancement opportunities
- Employee stock purchase plan at a 15% discount
- Professional liability insurance
- Support and payment for mandatory license/s and hospital credentialing

*These benefits are for full time employees, employees in other types of employment classifications may be eligible for some of these benefits.

Mednax Services, Inc. is a national medical group. Over the last 40 years, through our network of over 3,500 clinicians in 39 states and Puerto Rico,

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PEDIATRIC NEUROLOGISTS – INTERMOUNTAIN WEST

We are seeking qualified, diverse candidates to join our group in the western U.S. Providers have options to work in several different settings- tertiary academic care at Primary Children's Hospital in Salt Lake City; a new children's hospital at the base of the Wasatch Mountains in Lehi; western life in Billings, Montana; and the rapidly growing Las Vegas! Clinical opportunities include in- and out-patient roles including sub-specialty (such as epilepsy) work. All of our team will also be able to work 3-4 weeks each year at Primary Children's Hospital, supervising the inpatient pediatric neurology service and working with residents.

All faculty will be members of the University of Utah/Department of Pediatrics. Qualified candidates must be Board Qualified/Board Certified in Neurology with Specialization in Child Neurology.

Interested individuals can apply for the position by sending a cover letter and CV to the division chief, Josh Bonkowsky, M.D., Ph.D., at joshua.bonkowsky@hsc.utah.edu. The University of Utah, an AA/EO employer, encourages applications from women and minorities.

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Minimum Requirements:

- MD or DO Medical Degree
- Eligible to be state licensed in the United States
- United States Residency and / or Fellowship training
- United States Board Eligible or Certified

Child Neurology Society
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