

QUARTERLY

DevSci *Developments*

INSTITUTE FOR INNOVATIONS IN
DEVELOPMENTAL SCIENCES NEWSLETTER



DEVSCI'S QUARTERLY NEWSLETTER

The beginning of a new year is a time to aspire and reflect on our goals for the months ahead. It is also a time to look forward with excitement at what promises to be an engaging and eventful year in DevSci. In this issue of DevSci Developments, we focus on the theme of new beginnings. Join us as we meet new community members, highlight recent research advances, and explore what's in store for DevSci in 2023.

If you would like to suggest content to be featured in an upcoming issue of the DevSci Developments, please contact us at devsci@northwestern.edu! We look forward to hearing your feedback!

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Honoring Generativity & Impact of Lindsay Chase-Lansdale: DevSci Scientific Exchange & Holiday Reception

DevSci hosted its annual Holiday Symposium & Reception: Honoring the Generative Scholarship of DevSci Founder [Lindsay Chase-Lansdale, PhD](#) at the Nexus of Child & Family Science, Policy, & Practice: NextGen Scholarship from her Mentees on December 7th, 2022. Former mentees of Dr. Chase-Lansdale served as the presenters and panelists, as they shared aspects of their work that reflect the impact of Dr. Chase-Lansdale's legacy as a transformative scholar and mentor.

DevSci Director and Professor of Medical Social Sciences, [Laurie Wakschlag, PhD](#), was Dr. Chase-Lansdale's first doctoral student at the University of Chicago. She kicked off the afternoon with an insightful presentation on observational methods and tools. Dr. Wakschlag reflected on Dr. Chase-Lansdale's capacity to build bridges across scholarly communities in order to address real-world problems. She noted her advice, stating: "If you can imagine it, you can do it. Sally forth and build your village. Don't ever lose sight of what matters." Dr. Wakschlag also brought nostalgic props that she shared during the presentation, including a bound copy of her dissertation and several items of clothing she wore at her defense.

Next, [Terri Sabol, PhD](#), who was a postdoctoral fellow of Dr. Chase-Lansdale's from 2011-2014, shared her work on the Science of Child Development to Improve Early Care and Education in the United States. "Lindsay is remarkable in so many ways, but the way that I think she's most profoundly influenced me...is [through] her unequivocal belief in the magic of human development and the power of developmental science to transform lives over time," shared Dr. Sabol.

[Terese Sommer, PhD](#) followed with an informative presentation on Two-Generation Education Investments: Defining the Field and Building the Evidence. "Lindsay has defined [the] field of Two-Generation education programs and, with her team, has built an incredible body of evidence," shared Dr. Sommer.



Presenters gather with Dr. Chase-Lansdale. From Left to Right: Drs. Matt Davis, Terese Sommer, Laurie Wakschlag, Lindsay Chase-Lansdale, Terri Sabol, and Onnie Rogers.



Drs. Ellen Wartella and Sandy Waxman share a toast to their colleague and friend, Dr. Lindsay Chase-Lansdale.

Dr. Sommer was Dr. Chase-Lansdale's postdoctoral mentee from 2008-2010, and has worked alongside Dr. Chase-Lansdale for over two decades, serving as the Co-Director of the Northwestern Two-Generation Research Initiative (NU2Gen) from 2013-2021.

Highlighting the fact that mentorship comes in many forms, Onnie Rogers, PhD, Associate Professor in the Department of Psychology, spoke next about the impact that Dr. Chase-Lansdale had on her career as an informal mentor. She describes Dr. Chase-Lansdale as putting forth, "[an] audacious and unapologetic effort to do the work which I think is so important." She shared some of her own research on identity development with a presentation entitled: Outside In: Centering The "Macro" in Developmental Research. In a nod to Dr. Chase-Lansdale she stated: "We live in a system that's designed for certain kids to fail. We have to be bold and audacious."

Rounding out the event, Matt Davis, MD, MAPP, shared his experiences of being a student of Dr. Chase-Lansdale's at the University of Chicago from 1998-2000. "Lindsay's influence on me has inspired me really to pursue better policy and programs for children and families through the power of highly relevant research."

He concluded by summarizing the themes that emerged from each of the presenters' talks stating, "Development matters. Research matters. Context matters. Bridging matters. Generations matter."

"I am profoundly changed because of the mentorship I received from Lindsay," -- Dr. Terri Sabol

Attendees raise their glasses in a toast to Dr. Lindsay Chase-Lansdale.





Strategic Planning Update

On November 1st, 2022, DevSci hosted the inaugural meeting of its Strategic Advisory Board comprised of thought leaders and experts in the developmental sciences. The Strategic Advisory Board, chaired by Lindsay Chase-Lansdale, PhD, was formed as a penultimate step in the Institute's Strategic Planning process. Board members provided guidance and recommendations for the Institute's goals for strategic growth, and their translation into short and long-term measurable outcomes. Their feedback is being integrated into a summary report that will be incorporated into DevSci's Strategic Plan.

The 2023-2027 Strategic Plan will be released in the coming months. Members of the DevSci community will be able to track the progress of strategic goals and priorities through a Strategic Plan Dashboard on the DevSci website in late Spring 2023.

External Members of the DevSci Strategic Advisory Board include:

New Employee Welcome



Paige Fix
Program Coordinator

Paige joined the DevSci team in October as a Program Coordinator. She is excited to use her experience in non-profit management, event planning, and business operations to support the Institute! Paige graduated from the University of Wisconsin-Milwaukee in 2020 with a Bachelor's degree in Social Work (minoring in Spanish) and a Professional Certificate in Non-profit Management. In her free time, she enjoys reading fiction, walking her two dogs along the lake, and exploring new places in Chicago.

You can connect with Paige at paige.fix@northwestern.edu.



Dima Amso, PhD
Columbia University



Iheoma Iruka, PhD
University of North Carolina



Elizabeth Ananat, PhD
Barnard College



Nivedita (Nita) Mohanty, MD
AllianceChicago



Natasha Cabrera, PhD
University of Maryland



Cynthia Osborne, PhD
Vanderbilt University



Ronald E. Dahl, MD
University of California, Berkeley



Meet The NU-MHE T32 Postdoctoral Fellows

The [NU-MHE T32 fellowship](#) provides a novel transdisciplinary approach designed to launch the next generation of neurodevelopmentally-oriented mental health researchers poised to accelerate the pace of clinical translation. NU-MHE is specifically designed to bring together personally- and disciplinarily- diverse trainees (including both PhD and MD scholars) and mentors as a paradigm for advancing cutting-edge translational mental health research. Please join us in welcoming members of the 2022-2024 cohort, Tierney McMahon, PhD and Brent Rappaport, PhD.

Tierney McMahon, PhD

Tierney received her PhD in Clinical Psychology from the University at Buffalo in 2021 and completed her predoctoral clinical internship at the Charleston Consortium Psychology Internship Program.

Tierney's research program focuses on the phenomenology of emotions and emotion regulation behaviors in mood and anxiety disorders by examining the interplay between contexts (e.g., stress, social experiences) and the individual. Her research aims to identify the relative contributions of stress and other contextual factors in modulating the neurodevelopmental pathways underlying emotional processes in mood and anxiety disorders across development. She is currently investigating the efficacy of an app-based mindfulness intervention for adolescents at risk for developing emotional disorders.

In her free time, Tierney enjoys playing guitar, watching live music, and reading.



Brent Rappaport, PhD

Brent's research program examines brain and behavioral correlates of internalizing psychopathology, with a particular emphasis on affective and social functioning in adolescence. Currently, he is studying whether specific brain and behavioral differences represent trait-like risk factors or indicators of depressed and/or anxious states. He is indebted to his wonderful past mentors and looks forward to the opportunity to train future psychologists.

The T32 Training Program will provide Brent with the skills to examine brain function longitudinally using structural equation modeling to differentiate trait and state correlates of psychopathology. His work has the ultimate goal of reducing risk for and shortening the duration of mental illness in youth and adults.

In his free time, enjoys improv comedy and trained in improv in high school and college.



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Community Spotlight

Q&A with Alex Dufford, PhD

Alex Dufford, PhD, is a faculty member who recently joined the Department of Medical Social Sciences in 2021. He is a developmental psychologist who utilizes neuroimaging to neuroimaging, machine learning, and developmental science to understand early life brain development.

What does your research focus on?

My background is in developmental psychology, at the intersection of developmental psychology and developmental neuroscience. I use neuroimaging as a tool to try to understand both typical and atypical brain development. I am interested in being able to predict risk for neurodevelopmental or psychiatric disorders and to identify the earliest neuro-markers for these pathways or trajectories. Neuroimaging may be able to detect precursors to these clinical sequences before we can measure them by behavior. This would allow us to intervene when there is immense neuroplasticity and harness that.

What types of neuroimaging tools do you utilize?

My main modality is functional-MRI and I look at how different large-scale networks in the brain communicate and co-fluctuate in activity. It gives you a sense of how these systems talk to each other and how the architecture of the brain develops over time. You can also measure it during sleep, so while most adults do tasks in the scanner, infants are usually asleep during the scans. I also utilized structural and diffusion MRI techniques to understand early neurodevelopment.

How did you get into this area of research?

In undergrad, I started in an infant EEG lab looking at visual processing and optic flow. After undergrad, I wanted to gain more hands-on experience and was a lab manager at Mount Sinai in New York City where I focused on adult cognitive control and attention. However, my interest kept coming back to development – I wanted to combine the worlds of



cognitive science and developmental science. A program at the University of Denver had a specialty in developmental psychology with an emphasis on cognitive neuroscience methods. My PhD work focused on examining associations between socioeconomic disadvantage and early brain development. Because I had the most imaging experience in the lab, I learned how to analyze baby images and I fell in love with the theoretical aspects of MRI. This led me down this pathway that I've stuck with. I later went on to do a postdoc at Yale, focused on machine learning methods and how they can be useful for prediction with infant MRI data.

Who would you like to collaborate with?

I would like to collaborate with individuals who are interested in the neurobiological underpinnings of the perinatal period. The perinatal period is such an important time of brain development for infants, but it is also an important time for caregivers. The neurobiological transition to having a new infant and those demands is an area of interest to me.

What's been the best thing about moving to Chicago?

That's a hard question. I think really there's two things: the food and live music. There's a ton of live music, every single night of the year featuring some amazing musicians. I also play guitar as a hobby. I've been able to meet a few other musicians and we've started to play small shows around the city.

You can reach Dr. Dufford at alexander.dufford@northwestern.edu or on Twitter at [@ajdneuro](https://twitter.com/ajdneuro).



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Research Highlights

Predict-to-Prescribe: Improving Language Outcomes for Children with Cochlear Implants

Cochlear implantation provides spoken language audibility for children with hearing loss not adequately addressed by hearing aids. However, the individual gains in receptive and expressive language after implantation are variable and language level is often below that of children with typical hearing. Traditional factors that influence language of implanted children, such as age at implant, do not account for the majority of outcome variability. For this reason, accurate language prediction on the individual child level using traditional methods is not possible. [Nancy Young, MD, FACS, FAAP](#), founder and Medical Director of the [Lurie Children's Cochlear Implant Program](#), was recently awarded a \$3M grant from the National Institute on Deafness and Other Communication Disorders, along with MPI Patrick Wong, PhD, former NU faculty and a Professor of Linguistics from the Chinese University of Hong Kong, to develop prediction models using pre-surgical brain scans. The goal of this research is to improve congenitally deaf children's language after implantation and to advance knowledge and theory of language development.

This grant expands Drs. Young's and Wong's work previously funded by an NIDCD R21 to use machine learning enabled analytics of brain scans to predict language in English learning implanted children. "Patrick and I began collaborating more than a dozen years ago, before the technologies we are using today were available. It took many years of persistence and trust which has enabled us to continue despite the significant geographic distance between us," says Dr. Young.

The current study will further develop predictive models for English learning and enable development of new models for Spanish learning children. Children will be recruited by four implant centers across the US in addition to Lurie Children's. The treatment arm of the study is based at Northwestern and led by [Megan Roberts, PhD, SLP](#). Parent-Implemented Communication Treatment (PICT) program, an effective intensive training program for parents to promote early communication skills developed by Dr. Roberts will be provided. The goal of the treatment arm is to test the hypothesis that children predicted to be poorer language performers, in comparison to those predicted to be high performers, will make more progress when provided with effective therapy. This is an essential step in developing a "predict to prescribe" approach using brain-based forecasting on the individual child level.

Ultimately, this research using brain structure and function for prediction of language may lead to personalized, cost effective treatment plans for children with a variety of language disorders.



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Cluster Meet & Mingle

On January 10th, the DevSci ambassadors welcomed back our Graduate Student Cluster members with a lively Cuban dinner at Cafecito in Streeterville. The event, which benefitted from being held early in the quarter, saw attendees come from four different programs. They drew on this diverse background to provide insight on navigating class schedules to preparing for qualifying exams. While exchanging introductions, members were also able to share how past jobs and research projects are influencing future career choices.



In the Winter and Spring Quarters the Grad Cluster is planning a series of events including a LinkedIn Workshop, and Informational Session about the Neurodevelopmental Core, a Career Panel Discussion, and Data Blitz. Dates are forthcoming, so stay tuned for more information!

Meet the Grad Cluster Leaders!



Timi Viragh

Timi is a 5th year PhD candidate in the Human Development and Social Policy program. She studies access to child and family policies and their impact on families with young children both in the American and European context.



Stephanie Crawford

Stephanie is a 4th year PhD student in the Communication Sciences and Disorders program. She studies social communication in individuals with autism spectrum disorder and their family members.



Emily Landau

Emily is a 4th year PhD student in the clinical psychology program at the Feinberg School of Medicine. She studies social communication in individuals with autism spectrum disorder and their family members.



Matthew Barraza

Matt is a 2nd year PhD student in the Driskill Graduate Program in Life Sciences at the Feinberg School of Medicine. He currently studies synaptic plasticity in neurodevelopmental disorders such as autism and epilepsy.



Ivanka Ristanovic

Ivanka is a 5th PhD candidate in clinical psychology at Weinberg. Her research focuses on the role of environmental and neurobiological indicators of stress in youth at risk for developing psychotic disorders.



Transdiagnostic Clinical Risk Calculators as a Critical Tool for Advancing Equitable Precision Medicine: Bridging Mental & Physical Health to Accelerate Translation

February 27th, 1:00-4:30pm CST (*in-person reception to follow*) | Virtual: Zoom | In-Person Location: Daniel H. Williams Auditorium, McGaw Pavilion, Chicago Campus

Clinical risk calculators integrate key information on individual patients to predict risk of future disease and guide clinical care. Bridging risk calculator development and implementation across varied health domains, developmental periods, and at varied stages of progress is key to impact and application. This workshop aims to accelerate translation through sharing insights and innovations across three typically disparate health domains across the lifespan.

In cardiovascular health, risk calculators' routine use in guiding treatment has transformed the standard of care and provided a quantitative assessment upon which patients can be stratified by risk. Applications are nascent in the mental health sphere and have not yet achieved appreciable clinical impact. Clinical integration is emerging for severe mental health disorders such as psychosis. Application for early childhood emergent psychopathology is in the development stage.

Risk calculators are an innovative and promising approach for advancing earlier life identification and prevention and provide robust quantitative and efficient tools that can address implementation barriers in real-world settings, reduce bias, and improve confidence in decision-making. Talks will address key considerations, limitations, and future directions of risk calculator research and implementation.

The schedule of events, along with a list of speakers and presentation topics, can be found [here](#).

Please contact paige.fix@northwestern.edu if you have any questions about the event.

[CLICK HERE TO REGISTER](#)

Upcoming DevSci Events



Tuesday, February 7th
1:00-2:00pm CST

'Spatial Cognition' with David Uttal, PhD DevSci Brown Bag

This is a virtual event. Please email paige.fix@northwestern.edu to receive the Zoom link

Thursday, February 16th
4:00-5:15pm CST

DevSci Quarterly Diversity Discussion: "Reflection Session"

This is a virtual event. Please email paige.fix@northwestern.edu to receive the Zoom link



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See You Again Soon!



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