



# International Society for Neuroethology

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## THIS ISSUE FEATURES

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**The Prez Sez**  
*Karen Mesce*  
President of the ISN



Greetings to All!

As the outgoing ISN President, this is my final 'Prez Sez' column. Soon, at the end of the 15th ICN in Berlin,

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the torch will be passed to the new President, **Cindy Moss**, and I have every confidence that she will do a spectacular job.

Reflecting on the past two years, it is astonishing to me how quickly my term has come and gone. My perceived evaporation of time can partly be explained by comparison with having served as the President-Elect for a much longer four years. Due to the Covid-19 pandemic, we ISN officers retained our positions for logistical stability while painfully coming to terms with the impossibility of a 2020 Congress. The wait for the 14th ICN in Portugal seemed endless, but since that 2022 meeting, it is easy to drift back to thoughts of my daily walks through the Gulbenkian Gardens as I made my way to the Congress' venue — how quickly the past two years have slipped by. Yes, indeed, here we are, fast approaching this summer's grand event: the 15th ICN in Berlin, Germany!

This year's Congress will be the most attended Congress since its inception in 1986, with over 830 registrants and more than 600 submitted abstracts. To reach this point, however, a vast ensemble of dedicated volunteers has been working tirelessly behind the scenes to ensure a successful meeting. There are many individuals to thank, but foremost are the Program Committee (chaired by **Elke Buschbeck** and **Coen Elemans**) and the Local Organizing Committee in Berlin (chaired by **Mathias Wernet**, with co-chairs **Rüdiger Krahe** and **Constance Scharff**). The phrase "be careful what you wish for" has truly come to fruition this year; we were certainly wishing for a solid attendance, but accommodating over 800 neuroethologists for a farewell banquet party has become no easy task for the local organizers!

An important job for our Program and Local Organizing Committees is fundraising for the Congress. Without such revenue, the ISN would be less able to offer travel-related financial assistance to many of our talented members, especially junior scientists and those who have been hard-hit by the economics of their personal lab situation and/or country of origin. As a Society, we have aimed to keep our membership dues low, but even though there is a clear and growing interest in the science that we represent, ISN membership levels are not keeping up with our growing management expenses and ability to fund the many meritorious award applications we receive. Our biennial Congresses are typically break-even events, and we have sadly had few donations from our members during the past few years. As a community, we simply need to do better to ensure the legacy and vitality of our ISN. Finally, we need to adapt and create initiatives for the future, and when we do, we need to have the fiscal stability to support those new initiatives. For example, we have ramped up

our efforts to create new Diversity Awards, but such initiatives need additional funding.

One creative way to generate new revenue and fortify our commitment to our next generation of neuroethologists has been through the creation of the "Future of Neuroethology" webinar series, spearheaded by **Ana Silva**, **Angie Salles**, and the rest of the Inclusion and Diversity Committee (**Josh Martin**, **Ayelén Nally**, **Vivek Nityananda**, **Lauren O'Connell**, and **Lukas Weiss**). I attended all four of these webinars and was blown away by the energy and professionalism of all the younger-investigator speakers who presented their compelling and cutting-edge research, and by the more senior participants who offered valuable career guidance. I very much hope to see these webinars continue because of their intellectual value and their role in building community and career skills, but alas, we received just under \$600 (US) in revenue from these events, thus underscoring the need for an increase in our membership dues and donations. I urge each of you to attend the Congress's business meeting, where we can discuss how best to support the ISN we all embrace.

Finally, on a more personal note, I would like to share my memories of the 2nd Congress for Neuroethology, which was held in Berlin, Germany, in 1989. This Congress marked my first time visiting Germany. Visiting Berlin and the Freie Universität Berlin again, after 35 years, invokes the musing that "life is change." The Greek philosopher Heraclitus is known for his (πάντα ρεῖ), *panta rhei*, or "life is flow... no man steps in the same river twice, for it is not the same river and he is not the same man."

The incredible museums, beer gardens, vibrancy, and sophistication of Berlin will have remained intact, but during the 2nd ICN, which was held in September of 1989, the Wall separating West and East Germany was still in place. I recall taking a half-day "tourist" trip into East Berlin, and I still remember the icy stares of the border agents; on the other side, I felt uneasy at the starkness there and remember an encounter with an artist who cried about the fracture of her family. In retrospect, I am glad I crossed the Berlin Wall because when it came down just two months later, I better understood the jubilation that ensued.

Although the Congress itself was unforgettable, some of the clearest memories I have of 1989 ISN-related events are of an invited satellite symposium on "*Arthropod Motor Systems*", which occurred immediately after the ICN. This much smaller meeting was held in Tutzing, on the shores of Lake Starnberg in Bavaria. With views of the Alps, we were wonderfully confined to a campus that

included a baroque palace (schloss) built in the late 1600s. I remember having deep conversations with colleagues about salient topics of the day: polymorphic networks, command-like systems, circuit flexibility and neuromodulation, individuality; roles of central versus sensory-related activities for locomotion, novel recording/imaging techniques, the genetics of behavior, and more — actually the same as today, except now we have better toolkits for tackling these issues. Looking back at the field, so much of neuroethology was then centered on arthropod systems, but the general principles of neural organization and function gathered from such studies continue to influence other areas of neuroscience and neuroethology.

I wish, however, that more women had been invited to the Tutzing meeting, but the research presented by **Eve Marder** and **Alison Mercer** (among us, only three speakers) had a disproportionately large impact on provoking participant discussions and igniting new collaborations. I even recall entering the welcome party, whereupon I was greeted by an unknown conference participant who inquired whether I was looking for my father. I explained that I was not looking for my father and that I was an attendee of the meeting just like himself. Hopefully, such encounters are now and forever in the past for my younger female colleagues. Later at the party, things turned for the better and I was warmly greeted by **Franz Huber** and his wife, Lore. When they learned that I was planning to tour more of Germany, they became quite animated, located a map of Germany, and proceeded to chart a detailed course for my future adventures. I followed their every suggestion and will be forever grateful for their friendship and advice. In Franz's later years, we corresponded about ISN-related issues, his health, and other interests. If you would like to learn more about one of Neuroethology's founders, **Friedrich Barth** has written a touching and comprehensive tribute to Franz, who passed away in 2017 (<https://doi.org/10.1007/s00359-017-1225-1>).



*Franz Huber, 1925-2017*

When I read Barth's tribute, I was struck by Franz Huber's same association with '*panta rhei*' that I myself have often pondered. What is priceless about our ISN-related meetings and community is that we have the opportunity to learn not only about the science of our scientific heroes but their humanity as well. The memory of Franz Huber will continue with a lecture in his honor at each biennial Congress. The speaker for this year's Huber Lecture will be **Gilles Laurent**, and if Franz were still with us, I believe he would be sitting at the edge of his seat.

Indeed, the river in the mind's eye of Heraclitus reflects change; there is flux in our perspectives on the world and the science we embrace. That said, as supporters of neuroethology, I hope you will continue to honor the history of our field and plan adaptively for its future. I hope your commitment will remain steadfast and bring you back again and again to your scientific home whereby the changes we make for our Society are for the better. I have no doubt that our Congresses are now richer, more culturally and scientifically diverse, and more welcoming than ever before. I look forward to seeing you soon for what promises to be a superlative ICN this summer!

Warmest regards,

**Karen Mesce**  
ISN President

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## ISN AWARD WINNERS

Each year the ISN awards honors and prizes to members of our community who have made significant contributions to the field of neuroethology. Travel and research awards are also granted to early career scientists who show serious promise. Here is this year's excellent roster of winners!

### Fellow of the International Society for Neuroethology



**Paul Katz**

*University of Massachusetts  
Amherst*

Paul Katz has been an active member of ISN since 1989 when he received the Young Investigator Award at the ICN in Berlin. He served as ISN President from 2010 to 2012. Paul co-directed the Neural Systems and Behavior Course at the MBL in Woods Hole from 2008 – 2012. He co-chaired the Gordon Conference on Neuroethology in 2008 with Catherine Carr. In 2022, Paul gave the Franz Huber Lecture at the ICN in Lisbon. Paul received a BA and MS in from Northwestern University in 1982. He received his PhD in 1989 at Cornell University working with Ron Harris-Warrick on the crab stomatogastric system. In 1988, he was a Grass Fellow at the MBL and then did a postdoc at Brandeis University with Irwin Levitan. For five years, he worked as a Research Assistant Professor in the lab of Bill Frost at University of Texas Health Science Center. Together, they published several papers on neuromodulation intrinsic to the swim central pattern generator of the sea slug, *Tritonia*. In 1997, Paul relocated to Georgia State

University, where he attained the rank of Regents Professor.

Paul's lab has focused on neuromodulation and the evolution of neural circuits in sea slugs. In 2017, Paul moved to the University of Massachusetts Amherst to direct the Initiative on Neurosciences, where he shifted the focus of his research from the swim CPG circuits composed of a small number of large neurons to studying the development and structure of the much larger number of small neurons using a nudibranch that can be raised in the lab, *Berghia stephanieae*.

-Catherine Rankin



**Ana Silva**  
*Universidad de la República de Uruguay*

Ana was born and lives in Uruguay, where she is a professor at the Universidad de la República. She served as the head of the Departamento de

Biología Celular y Molecular from 2015 to 2022 and as the president of the Sociedad Uruguaya de Neurociencias, among other prestigious positions in her scientific community.

Very early in her career, Ana found a prolific ground for her research in the study of social communication among electric fish. In more recent years, Ana has expanded her research interests to include chronobiological modulation in fish and humans. A review of her list of publications reveals a fruitful and coherent path of research in the field of neuroethology. Her studies on Uruguayan electric fish have highlighted the importance of focusing on species available in local biotopes due to the originality of the questions and results that can be obtained in doing so.

Her work is acknowledged internationally, as shown by her election as a main plenary speaker at the XIII International Congress of Neuroethology held in Brisbane, Australia (2018) and her participation in multiple international meetings where her work was prominently featured. The enthusiasm she inspires among students and peers was particularly evident at the 2016 ISN meeting in Montevideo, which was the first ISN meeting held in a Latin American country and a complete success, thanks to Ana's exceptional efforts as president of the local organizing committee.

-Lidia Szczupak and Martin Giurfa



**Justin Marshall**  
*QBI, University of Queensland*

Justin Marshall was born on January 8, 1962. His father, Norman Bertram Marshall, was an authority on deep-sea biology, and his mother, Olga, was a noted biological illustrator. Justin attended the University of St Andrews, graduating in 1985, and completed his PhD at the University of Sussex in 1991, supervised by Michael Land. He moved to the Vision Touch and Hearing Research Center at the University of Queensland in 1996 and to the Queensland Brain Institute in 2008.

Marshall's research explores the neurobiology of perception, especially vision. He works primarily on color vision and polarized-light vision in marine animals, but he has also studied visual neuroanatomy and visual ecology in general. His research includes marine invertebrates, primarily stomatopod crustaceans and cephalopods, as well as marine vertebrates and animals inhabiting rainforests. He has also been involved in engineering applications and instrument development.

Marshall has over 300 publications, many of which appear in top-level journals including *Science*, *Nature*, *Current Biology*, and *PNAS*. His coauthored books include the award-winning *Visual Ecology* and *Coral Reefs and Climate Change*. He also edits books, including the *Springer Series in Vision Research*. He has mentored 30 PhD students from 11 countries and 19 postdocs. He has received numerous international awards and is a member of the Australian Academy of Science.

Marshall is very active in public outreach, with the hugely successful CoralWatch citizen science project and contributions to numerous scientific documentaries and public articles. He organized the highly successful 2018 meeting of the ICN in Brisbane, Australia.

-Tom Cronin



**Andrea Simmons**  
*Brown University*

Andrea M. Simmons is a scientific leader in the field of auditory neuroethology. She earned her B.S. in psychology and history from the University of Pennsylvania and her Ph.D. in experimental psychology from Harvard University. She conducted postdoctoral research at Cornell University in

the laboratory of Robert Capranica, a distinguished founder of the ISN.

Andrea is currently a full professor at Brown University in the Department of Cognitive, Linguistic and Psychological Science, with a joint appointment in the Department of Neuroscience. She is also a member of the Carney Institute for Brain Science. Andrea is an elected Fellow of the Acoustical Society of America and editor of the 2002 *Springer Handbook of Auditory Research, Acoustic Communication*, which is now considered a classic book in the field. She is also an associate editor of the *Journal of Comparative Physiology A*, a premier neuroethology research publication outlet. She is the author of over 135 peer-reviewed research articles and 15 book chapters.

Andrea has a long and distinguished record of service to the ISN. She served on the ISN Awards Committee and the Council, and she is currently Chair of the ISN Young Investigator Award Committee. She was Scientific Program Committee Co-Chair of the College Park ICN in 2012 and a Scientific Program Committee Member of the Vancouver ICN in 2007. Andrea greatly deserves to join the ranks of ISN Fellows for her distinguished contributions to the field of auditory neuroethology and her service to our community.

-Cynthia Moss



**Jakob Christensen-Dalsgaard**  
*University of Southern Denmark*

Jakob Christensen-Dalsgaard is a biologist and neuroscientist with expertise in bioacoustics, auditory physiology, and the biophysics of the middle ear in amphibians and reptiles. His research focuses on sound localization, non-tympanic hearing, and underwater hearing, which he has studied in amphibians, lizards, turtles, crocodiles, and birds, as well as on modeling, including robotics, of auditory systems. He co-directs the Center for Biorobotics at the University of Southern Denmark and is vice chairman of the Danavox Jubilee Foundation for symposia in audiology (International Symposia on Auditory and Audiological Research, ISAAR).

Dr. Christensen-Dalsgaard received his Ph.D. from the University of Southern Denmark in 1990, where he has been a Lektor since 1999. He has published almost 200 scientific papers and has a long history of discoveries, influential publications, and contributions to the field of neuroethology. As a graduate student with Axel

Michelsen, he learned laser vibrometry and, early in his career, was the first to use vibrometry to understand directional hearing in frogs. Importantly, Dr. Christensen-Dalsgaard combines this technical leadership in vibrometry and acoustics with major contributions to studies of underwater hearing, vibration detection, and directional hearing.

Dr. Christensen-Dalsgaard has a long history of service to the neuroethology community, including the biennial international Bioacoustics field course taught at SDU field stations. In addition to his scientific expertise, Dr. Christensen-Dalsgaard is a noted expert and performer of medieval music.

-Catherine Carr

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### **The Mosaic (Inclusion and Diversity) Prize**



**Catherine Carr**  
*University of Maryland*

Catherine Carr is Professor of Biology at the University of Maryland, College Park. She earned her BS and first class honors in Zoology from the University of Cape Town in 1977, her MA in Biology from the State University New York at Buffalo in 1978, and her Ph.D. in Neuroscience from University of California San Diego in 1984, where she studied temporal processing in weakly electric fish under the supervision of Walter Heiligenberg. She received the Society for Neuroethology's Young Investigator Prize in 1984 and completed a postdoctoral fellowship at the California Institute of Technology in 1987 with Mark Konishi, where she worked on sound localization in barn owls. She received an Alfred P. Sloan Research Fellowship in 1988. She joined the Zoology Department at the University of Maryland, College Park in 1990. There, she and her students work on temporal coding in birds and reptiles. Catherine has also worked at the Marine Biological Laboratory, beginning as an instructor in the Neural Systems and Behavior course in 1990. She was appointed to the faculty of the course in 1995 and was Co-Director from 2000-2004. From 2005-2008 she served as the Grass Foundation Lab Director. She received a Humboldt Senior Research Prize (2004, 2011), was a fellow of the Hanse-Wissenschaftskolleg in 2011 and became a fellow of AAAS in 2012. In 2015, she was named *Doctoris Honoris Causa* by the University of Southern Denmark and Distinguished University Professor at the University of Maryland. Dr. Carr was elected Chair of the Grass Foundation for 2018-2020.

## Capranica Neuroethology Prize



### **Marissa Applegate**

Marissa Applegate earned her PhD in the lab of Dr. Dmitriy Aronov at Columbia University. There, she studied the neural mechanisms that underly episodic memory using memory-specialist food-caching birds. She is currently a postdoctoral associate in the lab of Dr. Rui Chang, studying how the peripheral nervous system senses the body's natural internal physiology.

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## Konishi Neuroethology Research Awards



### **Pauline Fleischmann**

Pauline N. Fleischmann is a CRC Research Group Fellow associated with the Collaborative Research Center 1372 “Magnetoreception and navigation in vertebrates: from biophysics to brain and behavior” at the University of Oldenburg since 2022 and interested in insect navigation and magnetoreception. We aim to understand where the magnetic sensors in insects are located and how they function; how insects process and integrate multimodal information in their brains; and how they make use of the magnetic sense for successful navigation. Our ultimate goal is to unveil the role of magnetoreception for spatial orientation in insects, and to characterize the sensory, neuronal and genetic mechanisms underlying this extraordinary behavior with regard to the respective ecological context. Our experiments take place both in the field and in the lab. We are passionate not only about research ourselves, but also about sparking excitement for science to students and the public.



### **Jessleen Kanwal**

Jess is a postdoctoral fellow in Dr. Joe Parker's lab at the California Institute of Technology. Her research focuses on how the nervous system processes multisensory information to facilitate complex interspecies interactions, using rove beetles. Rove beetles (Staphylinidae) exhibit a wide array of symbiotic relationships, ranging from the use of chemical defenses

to ward off ant predators to employing chemical camouflage to infiltrate ant colonies. Using neuroethological and comparative approaches, Jess aims to deepen our understanding of how social cues are integrated in the brain to enable species recognition and drive the evolution of intricate behavioral interactions. Beyond research, Jess enjoys leading science outreach workshops on the neuroscience of dance and learning different cultural dance forms in community.



### **Martha Daniel**

Martha is a PhD student in both the Ecology of Vision Group at the University of Bristol and the Ecological Neuroscience Group at Macquarie University. Though she has a strong background in marine biology and behavioral ecology, her research experience has been based in cognitive behavior and sensory neurobiology. Martha's PhD research explores the foraging and navigation behaviors of mantis shrimp (Stomatopoda), with the goal of describing how environmental visual cues influence navigation. By comparing field observations and laboratory experiments, she aims to show the relative priority of different sensory modalities as stomatopods move through their complex coastal habitats. Martha's interests outside of research include writing poetry, running, and listening to an eclectic CD collection.



### **Cynthia Chai**

Originally from Sarawak, Malaysian-Borneo, I am a Leon Levy Neuroscience Research Fellow at Columbia University in New York City. My interdisciplinary research program integrates approaches from molecular, systems, and evolutionary comparative neuroscience to study the neurogenetic basis of speciation. My research goal is to provide a mechanistic understanding of how nervous systems are adapted at the molecular and cellular levels across evolutionary timescales to produce emergent properties that enable animals to thrive in our dynamic biosphere. I received a BA in Neuroscience with a Mathematics minor from Mount Holyoke College and a PhD in Neurobiology from the California Institute of Technology. Outside of the lab, I enjoy volunteering for science outreach events, spending time with friends and family, and traveling to new places.

## Young Investigator Awards



### **Inés Sotelo**

I am a young investigator transiting the intriguing frontiers from postdoctoral fellow to assistant researcher, which in my case literally involved changing countries. I did my Masters and PhD at the University of Buenos

Aires in Argentina, my home country, where I centered on the study of spatial navigation in an amphibian species and its underlying neural circuitry. After that, I relocated to the USA, as a postdoctoral fellow at the newly launched lab of Dr. Ada Eban-Rothschild in University of Michigan, where I shifted focus to study sleep. During my postdoc, I employed mice as experimental models and I ran wireless electroencephalogram/electromyogram and behavioral manipulations to determine sleep-wake patterns in social-living conditions. I also collaborated in a project to study the role of the nest and the sleep preparation routine on sleep consolidation. Now that I am recently back in Buenos Aires, I am working towards soon establishing my own neuroethology-based research lab.



### **Samuel Fabian**

My research focusses on aerial pursuit and similar goal-directed behaviours in flying insects. During my Ph.D. with Paloma Gonzalez-Bellido at the University of Cambridge, I investigated the ways in which

miniature aerial predators are specialised to detect and catch their prey. Now as a post-doc with Huai-Ti Lin at Imperial College London, I study the visual guidance that underpins aerial interactions between insects. While I principally work on aerial combat between dragonflies, I have recently been expanding our recordings to include mayflies, damselflies, butterflies, moths, and many other taxa. My goal is to understand the optimisation and trade-offs that shape the patterns of insect flightpaths.



### **Robin Grob**

My research as a PhD student at University of Würzburg and now as a Walter Benjamin postdoctoral fellow at NTNU Trondheim focuses on the neuronal basis of insect spatial orientation. I combine

behavioral, electrophysiological, and neuroanatomical approaches in the laboratory and in the field to reveal how orientation cues are encoded in an animal's nervous system to produce a goal-directed navigation behavior. I am especially interested in understanding how the Earth's magnetic field is used by animals for orientation, how it is processed in the brain, and how it is combined with visual cues, such as skylight cues, to establish a robust navigation system.



### **Marcel Sayre**

I am a Postdoctoral Researcher studying the evolution of neural circuits that underlie navigational behavior in arthropods. During my PhD, I developed a workflow utilizing serial block-face electron

microscopy and neuron tracing to generate connectomic datasets of large brain volumes. This technique enabled us to compare navigational brain areas across distantly related species, highlighting fundamental regions of neural circuits that have persisted through evolutionary time. In my current role, I am pairing these anatomical reconstructions with functional neural recordings using a VR setup to record from central brain circuits in a walking ant.

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## Developing Neuroethology Awards



### **Federico Gascue**

Federico Gascue is a PhD student at University of Buenos Aires, Argentina. He specializes in neuroethology, with a focus on the role and mechanism of sensory adaptation in the olfactory system of honey bees.

Under supervision of Dr. Fernando Locatelli he conducts both behavioral and physiological experiments to unravel the neural underpinnings and behavioral implications of sensory adaptation.



### **Adriana Migliaro**

Adriana Migliaro is an Assistant Professor of Neuroscience at Universidad de la República (Montevideo, Uruguay). Her research aims at understanding how the brain adapts behavior to the challenges of the natural environment. She has

worked in different aspects of electric fish neurobiology and currently combines laboratory experiments with field work, taking advantage of the proximity of fish natural populations, and using a variety of technical approaches. Currently her lab is dealing with how the circadian system is modulated by environmental cycles, particularly the daily temperature cycle, the changes in the melatoninergic system that translates natural cyclic information and the role of social context as an alternative time giver. Since her PhD years she is working towards positioning South American weakly electric fish as champion species for studying the functioning of circadian clocks in the natural world. Adriana is passionate about cooperative organization of research groups and committed to foster an inclusive, kind and supportive environment, where science and people can grow together.



### **Veronica de la Fuente**

My name is Verónica de la Fuente, I am a biologist from the Universidad de Buenos Aires, and I recently started my own lab at the Instituto de Fisiología, Biología

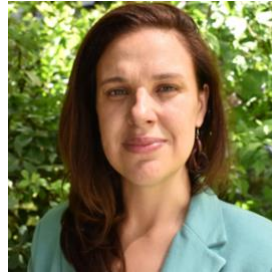
Molecular y Neurociencias (IFIBYNE) in Argentina. In the lab, we are interested in understanding the mechanisms underlying the formation of social memories. Currently, we are studying the role of neuropeptides and focusing on answering our questions from a circuit perspective using mice. I enjoy teaching at the university and engaging in scientific outreach with a gender perspective.



### **Sonam Chorol**

I am Dr Sonam Chorol, a post-doctoral fellow working with Dr Raghav Rajan at the Indian Institute of Science Education and Research (IISER), Pune, India. My research interest leans toward understanding the

functions and mechanisms of vocal signal production. My PhD dissertation focused on examining functional aspects of different vocalization in the wild population of social passerine, Jungle Babbler with Dr Manjari Jain at IISER Mohali. I then shifted my research field to study the mechanism of vocal production. For my postdoc, I am working on understanding neural correlates of song initiation using extracellular neural recordings in the song motor pathway of the male zebra finch. Outside the lab, I am a passionate birder, I like to observe birds and other animals in their natural habitat.



### **Paula Pouso**

I am an early-career researcher at the Universidad de la República in Uruguay. Since I decided to leave medical practice and dedicate myself to scientific research, I have been enthusiastic about studying the neural bases of behavior. Initially, I worked on my master's thesis on seasonal plastic changes in the brain. Later, for my PhD, I explored the neuroendocrine basis of agonistic and reproductive behavior. During these years, I conducted my research using cellular and behavioral approaches in weakly-electric fish. Currently, I am setting up my lab to address questions using a tree frog native to Uruguay, which is being studied for the first time as a neuroethological model. I began studying its behavior in nature, focusing on four aspects: 1) chorus vocal behavior and its relationship with physical factors; 2) individual vocal behavior, describing the types of notes and their variability according to the context; 3) nonapeptidergic modulation of vocal behavior through pharmacological trials conducted in the field; and 4) neuroanatomical description and identification of hypothalamic nonapeptides in the brain of the species. In the future, I am interested in elucidating the neural mechanisms underlying the emission of vocalizations involving hypothalamic nonapeptides.



### **Lautaro Duarte**

My name is Lautaro Duarte. I am a biologist from the University of Buenos Aires. I am currently finishing my Ph.D. at the Instituto de Fisiología, Biología Molecular y Neurociencias (IFIByNE). My research project is focused on understanding the mechanisms involved in learning-dependent plasticity in the antennal lobe. To study that, I am using *Drosophila melanogaster* as an animal model to perform behavioral and olfactory coding experiments.



### **Chinmayee Mukunda**

I am a PhD student in Prof. Sanjay Sane's lab at NCBS, Bangalore, India. My work involves understanding the movement encoding by the mechanosensory Johnston's organ on the hawkmoth antenna using electrophysiology. I am intrigued by complex



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behaviors such as navigation, learning, and camouflage exhibited by insects, spiders, and cephalopods. I am looking forward to studying the neural basis of such behaviors. I am excited to attend ICN 2024 and meet the neuroethology community.

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### Diversity Awards



#### **Cecilia Jalabert**

I am a postdoctoral researcher at the Instituto de Investigaciones Biológicas Clemente Estable in Uruguay. I completed my undergraduate and master's studies in Uruguay before moving to Canada to pursue a PhD at the University of British Columbia (UBC). My research focuses on understanding the neuroendocrine mechanisms that regulate social behavior, specifically investigating the local synthesis of neurosteroids in the brain and their role in modulating aggression. I aspire to contribute to unraveling the complex relationship between hormones, behavior, and environmental cues.



#### **Adara DeNiro**

Adara DeNiro is a Ph.D. at the University of Utah working under the supervision of Dr. Ayako Yamaguchi. Her research focuses on studying the neural basis of vocalization across different sexes and

species of clawed frogs.

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### Heiligenberg Student Travel Awards

#### **Abigail Shaughnessy**

*QBI, University of Queensland*

Research topic: Seasonal plasticity in colour vision of damselfishes and surgeonfishes

#### **Aditi Mishra**

*National Centre for Biological Sciences, TIFR*

Research topic: Adaptive innate preferences of solitary generalists and its flexibility.

#### **Aditya Krishna**

*Johns Hopkins University*

Research topic: Hippocampal encoding of object distance in echolocating bats

#### **Alexandra Gurgis**

*Case Western Reserve University*

Research topic: Ostracod neuroanatomy reveals ancient origin of mushroom bodies and central complex in Pancrustacea

#### **Bianca Jaske**

*University of Würzburg*

Research topic: Influence of temperature on motion processing in the central brain of bumblebees

#### **Giovani Cabrera**

*Macquarie University*

Research topic: The visual capabilities of Australian strobe ants (Formicidae: Opisthopsis)

#### **Juan Vásquez**

*UdelaR – Clemete Estable Institute*

Research topic: Hot fish: synchronization of behavioral rhythms by temperature in weakly electric fish

#### **Madeleine Snyder**

*Max Planck Institute for Biological Intelligence*

Research topic: Song duels adhere to context-dependent rules in nightingales

#### **Martin Jarzyna**

*Washington University in St. Louis*

Research topic: Shared Neural Substrates for Seasonal and Evolutionary Shifts in Sensorimotor Integration

#### **Neha Rajput**

*Wayne State University*

Research topic: Mapping the neural basis for individual differences in the exploratory behavior of adult zebrafish

#### **Ruth Gutjahr**

*University of Graz*

Research topic: Neuronal layers in the dorsal telencephalon of the peacock gudgeon

#### **Shouvik Mandal**

*Indian Institute of Science Education and Research,*

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Research topic: Changes in respiratory pressure at syllable onset are correlated with variable sequencing of Bengalese finch song

**Soshi Yoshida**

*Doshisha University*

Research topic: Prey detection strategy in echolocating bats -Doppler shift compensation as a S/N improving strategy-

**Sree Subha Ramaswamy**

*National Centre for Biological Sciences, TIFR*

Research topic: Chemical cues mediate mound building behavior in termites

**Stephanie Heyworth**

*University of Queensland*

Research topic: Seahorse visual systems: Multiple regional specializations within the retina support small prey capture



## "THE FUTURE OF NEUROETHOLOGY"

Early Career Representative, **Claire Rusch** reflects on the successes and lessons learned organizing the first ISN early career webinar series.

During this last off-meeting year, the Inclusion and Diversity Committee—comprising **Ana Silva, Vivek Nityananda, Ayelén Nally, Angeles Salles, Lukas Weiss, Lauren O'Connell, and Josh Martin**—along with us, the early career representatives (**Saumya Gupta** and myself), launched a new initiative: a series of four webinars titled “The Future of Neuroethology.” More information about the organization and the outcomes of the first two webinars can be found in our latest newsletter (December 2023). For the last two webinars, the diversity of our speakers, reflected in their scientific approaches, study animals, locations, and more, once again showcased the richness of our field and its promising future.

Our third webinar began with a presentation by **Vitor Dos Anjos** (Princeton University, USA). Vitor discussed his work on mosquito olfaction, particularly focusing on the evolution of olfactory receptors and neurons across different species. **Dr. Anastasia Morandi Raikova** (Università di Trento, Italy) followed with her research on the neural mechanisms of spatial navigation in domestic chicks. She demonstrated that chicks use a hierarchy of cues to orient in an arena and explored how social and spatial relations are represented in the hippocampus.

Finally, **Dr. Sam England** (Museum für Naturkunde, Germany) concluded the webinar with his work on static electricity as a sensory cue. He identified candidates for electrosensory structures and illustrated how prey can detect predators using these cues in the air.

The final webinar concluded the series with two fantastic speakers. **Megan Maciejewski** from the University of Illinois Urbana-Champaign (USA) shared her research on the neuroendocrine mechanisms that underlie the loss of parental care behavior in a population of threespine stickleback. **Dr. Marcelo Moglie** from the Francis Crick Institute (UK) wrapped up the series by sharing insight into the visual pursuit of targets and the various strategies mice employ.

One aspect of the webinar series that I only briefly mentioned in the last ICN newsletter was the inclusion of a career panel at the end of each session. These panels featured scientists from diverse career paths, providing valuable insights and guidance. We are incredibly grateful to all our panelists for sharing their career journeys, engaging with our audience, and undoubtedly boosting the confidence of many early career scientists. There are many ways to be a scientist and feel accomplished professionally. Our heartfelt thanks go to our panelists: **Dr. Melanie Basnak** (Senior Research Manager at Rethink Priorities), **Dr. Gervao Batista** (Senior Scientist at Regeneron), **Dr. Josh Martin** (Assistant Professor of Biology at Colby College), **Dr. Cecilia Herbert** (Training, Support and Community Engagement at Open Ephys), **Dr. Stephanie Gage** (Associate Program Director at the NSF, Directorate for Computer and Information Science and Engineering Foundations of Emerging Technologies program leader), **Dr. Nacho Sanguinetti-Scheck** (HFSP Fellow at Harvard University, Incoming Assistant Professor at the University of Pennsylvania), and **Dr. Angélique Paulk** (Instructor in Research at Mass General Research Institute, Instructor in Neurology at Harvard Medical School). Many of them are active in our community or on social media (e.g., LinkedIn), and they are all easily approachable. Don't hesitate to reach out to them!

As we concluded this initiative, we, the organizers, took time to reflect on the series' successes, what we might do differently in the future, what should remain the same, and other considerations. To gather feedback, we sent a survey to all participants and speakers. Although the response rate is low as of now (if you registered but did not receive the survey link, please let us know), we are pleased to see that our views aligned and participants were overwhelmingly satisfied with the talks and career panels. For those attending the Berlin conference this year, we will share the collected feedback and our future plans with

you at the IDC meeting (Tuesday, July 30 at 1 p.m.). This will be another excellent opportunity for you to share any additional feedback and suggestions. Lastly, whether or not you registered for or attended the series, please feel free to reach out with any suggestions for future editions of this initiative!

I look forward to seeing many of you at the conference. Don't hesitate to come talk to me or Saumya, send us an email, or share your thoughts on how our society can better support early career scientists.

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## EARLY CAREER EVENTS AT ICN 2024 IN BERLIN

Early Career Representative, **Saumya Gupta** looks forward to our early career programming at this year's meeting.

We are thrilled to announce the early career events planned for the upcoming ICN 2024, taking place in the vibrant city of Berlin this July. These events are specifically designed to enrich the conference experience, provide career guidance, and foster a sense of community among early-career neuroethologists. We encourage all students and postdocs to participate and make the most of these opportunities.

### Career Planning Session: Exploring Diverse Paths

Join us on Monday, July 29th, during the lunch break for our Career Planning Session. This 1 hour and 15-minute event will feature 6-8 scientists from a variety of professional backgrounds, including research institutions, research-focused universities, teaching-focused universities, and non-academic scientific spaces. Each panelist will briefly introduce themselves and their career journey, highlighting the diverse opportunities available in neuroethology. Following the introductions, you will have the opportunity to ask questions to the panelists and engage in interactive small-group discussions on several topics, such as choosing a postdoc position, leading a research group, pursuing science in a developing country, teaching-focused careers in neuroethology, careers outside of academia. You'll have the chance to rotate among tables that interest you, providing a unique opportunity to ask questions and gain insights from experienced professionals.

### Student/Postdoc Icebreaker Event

Don't miss our Student/Postdoc Icebreaker Event at the end of Monday, July 29th! This casual gathering will provide food, drinks, and a great atmosphere for you to meet your peers and our friendly conference buddies –

local students who will be your go-to guides for navigating the city. It's the perfect setting to make new connections and enjoy some well-deserved relaxation.

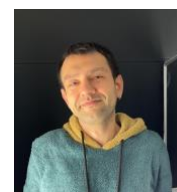
### Meet Your Conference Buddies

We're excited to introduce some of our Conference Buddies for ICN 2024! These local students/postdocs will be your guides to the city of Berlin and the conference itself:

- **Sara Saab:** A second-year PhD student in Prof. Mathias Wernet's lab at Freie University Berlin. She is a Lebanese, living in Berlin for the past year and a half.



- **Baris Can Mandaci:** A second-year PhD Student in Prof. Mathias Wernet's lab at Freie University Berlin, studying synapse formation of skylight polarization circuitry during development.



- **Jana Petri:** A postdoc in Prof. Constance Scharff's lab, behavioral biology group at Freie University Berlin. She is interested in the neural basis of speech and language learning in humans by using song learning in songbirds as a model system. She is also the academic coordinator of an Early Career Researcher Fellowship Program (College for Life Science at the Wissenschaftskolleg zu Berlin, Institute for Advanced Study, Berlin). The program is always looking for excellent life scientists at the Postdoc and Early Group Leader stages.



Our Conference Buddies along with other local early career scientists will prepare a detailed Google document with tons of information about Berlin, and they will also manage a WhatsApp group to keep you updated and answer any questions during the event. We encourage all students and postdocs to take full advantage of these opportunities to enhance your network, receive career guidance, and enjoy your time at ICN 2024.

We look forward to welcoming you in Berlin!



## THE BEST CHILDREN'S BOOKS FOR RAISING YOUR FUTURE NEUROETHOLOGIST

ISN Council member **Jessica Fox** recommends a reading list for inspiring children to think like a neuroethologist.

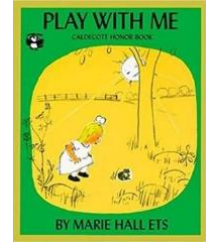
With the recent push in K-12 education towards any and all things STEM, there has been an explosion of children's books written with the intent to get kids interested in science. This is a laudable goal, of course, but it's probably unnecessary: children are inherently interested in science and the natural world. Anyone who has spent time with a kindergartner knows that you can point out an ant on the sidewalk and they will ask fifteen questions (with follow-ups and "more of a comment" remarks), about what that bug is doing and where its mother might be. They do not need our help to begin asking questions about the natural world, especially about a topic as compelling as animal behavior and its mechanisms. The best children's books shine in their ability to help kids frame and answer those questions and connect their answers to the larger world around them. Here is a brief guide to some of the books I've read that have done an admirable job of demonstrating ways of seeing and interrogating the natural world.

I don't have a specific expertise in K-12 pedagogy. I came by this list the honest way: with a trip to the public library every weekend for the last five or so years with my three children, ages 7, 5, and 5 (favorite animals are cats, owls, and sharks, respectively). I've been amazed by the beautiful art that can be found in children's books and I've discovered some real gems. I've also been disappointed by the thousands of books about animals that are little more than a list of facts about where the animals live and what they eat. My least favorite is a series called "Who Would Win," in which the author provides a handful of incomplete and misleading facts about two animals, often widely separated in geography or even geological time, and then imagines a fight to the death. (Of course, my son fell in love with these books. I had to read one every night for a month.) The list here focuses on books that go the extra mile and help kids think about ways of seeing the world. They all have engaging illustrations—no stock photos here—and they are thoughtful about their subjects and their audience.

If you decide to explore children's books about our field, let me also recommend going outside of your specific area of expertise, so that you won't be distracted by all of the details that you know are wrong. As an invertebrate neuroethologist, I've been disappointed by crimes against holometabolism (no, "baby bee" does not look like a small version of "mama bee"), and I snapped shut a book

about stomatopods when the first page declared that they are a kind of shrimp. But it doesn't bother me if the phylogeny of the pinnipeds is oversimplified or if a dinosaur is incorrectly named, and I can enjoy it much more.

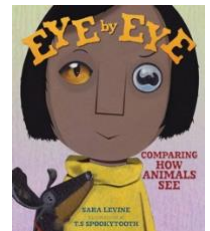
**Ethology:** *Play With Me* by Marie Hall Ets (1955): This Caldecott Medal winner would have escaped my attention completely if it hadn't been sent by Dolly Parton as part of her Imagination Library book giveaway program. It's an older book with spare, sketch-y illustrations in which a little girl tries to play with the animals in the meadow around her, but she accidentally scares them all away. When she stops and sits quietly, the animals slowly resume their natural behaviors—and some of them even approach her to play. It's a gentle reminder that if we want to see animals being themselves, it's often best to sit back and leave them alone.



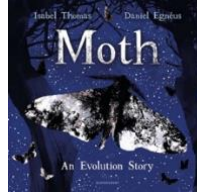
**Umwelt:** *They All Saw A Cat* by Brendan Wenzel (2016): Another Caldecott medalist, with gorgeous illustrations in rich colors, *They All Saw A Cat* features an ordinary tabby cat observed from the perspectives of various other animals as it walks through the world. A bird sees it from overhead; a mouse sees its sharp claws; an earthworm feels its vibrations. My favorite is a blurry, pixelated cat viewed by a bumblebee. This book shows how each animal's world is influenced by its sensory physiology and ecology, and encourages us to imagine the world from another perspective. I read it out loud to my students on the first day of my Sensory Biology course; it sets the stage for the comparative approach we take throughout the semester and it also helps them relax, for at least a few minutes.



**Sensory Physiology:** *Eye by Eye: Comparing How Animals See* by Sara Levine (2020): In this inventive and weird book, kids imagine how they might see the world with the differently-shaped eyes of some familiar and unfamiliar animals. For more comparative amusement, the same author's *Bone by Bone* is a wild ride through vertebrate skeletal anatomy. My kids were asked to imagine what animal they would be if they only had vertebrae and a skull; I had to chase three snakes down the hallway.



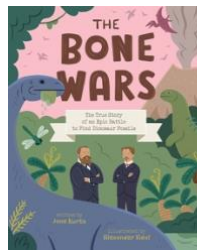
**Evolution:** *Moth* by Isabel Thomas and Daniel Egneus (2018): The classic story of the evolution of the peppered moth (*Biston betularia*) during the Industrial Revolution and beyond is told here through beautiful illustrations where dark shadows lend drama to the unfurling of little black and white wings.



**Comparative Behavior:** *Mama Built a Little Nest* by Jennifer Ward (2014): This adorable book focuses on a single bird behavior, nest construction, and provides a sweet little rhyme about how different birds do it. Though most of the rhymes do start with the book's title, the author includes lots of exceptions for scrape nests, brood parasites, and hard-working bird dads.



**Social and Ethical Aspects of Science:** *The Bone Wars* by Jane Kurtz (2023): Though outside the field of neuroethology, the true story of the intense competition to find dinosaur bones in the late nineteenth century is told here with all of the morals front and center. Edward Cope and O.C. Marsh were friends turned enemies, and in their race to outdo each other, they destroyed samples, lost data, and made mistakes that stuck around in the literature for years. If you're raising a future scientist, the most important lesson to impart is how to treat the other people working with you. May we all remember it well.



snacks and drinks. The focus will be on interacting with old and new colleagues and friends and having an enjoyable kickoff for our favorite conference.

Don't forget to use the hashtag **#icn2024berlin** for your social media posts.

We look forward to seeing you all in Berlin!

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## 2025 GORDON RESEARCH CONFERENCE

**Neuroethology: Behavior, Evolution and Neurobiology**

**“A Systems View on Behavior, Genes, Neurons and Environment”**

<https://www.grc.org/neuroethology-behavior-evolution-and-neurobiology-conference/2025/>

We are very much looking forward to welcoming you to GRC Neuroethology, held from June 29 to July 4, 2025, at the lovely Renaissance Tuscany Il Ciocco. The program will integrate the deep roots and new branches of the field and, in the spirit of Krogh's many marvelous animals, showcase a variety of organisms while highlighting the wonderful work carried out both in the field and in the lab. We will explore how animals manage to thrive on a changing planet through themed sessions that range from sensory mechanisms to behavior, neuronal integration, and cognition.

Some information is already available on the GRC website. If you would like to learn more about the conference, please reach out to Julie Simpson (co-chair of the 2025 conference) or Eva Fischer and David Schulz (vice chairs), who will be at ICN 2024 in Berlin and will be happy to talk to you.

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**SEE YOU IN BERLIN!**

**A message from the Local Organizing Committee for the 2024 ICN in Berlin, Mathias Wernet, Constance Scharff, and Rüdiger Krahe.**

We are on the final stretch of preparations for ICN 2024 in Berlin. Hopefully, you have already booked your travel and accommodation for the congress. With 830 registered participants, ICN 2024 is going to be the biggest neuroethology conference in the history of our society. By the time you read this newsletter, the scientific program will have already been posted on the conference website (<https://www.icn2024-berlin.org/>). Make sure to join us for the Welcome Reception on 28 July at 6 p.m. in the Henry-Ford Building, which is also the venue where the conference is held. Following a few short introductory words, there will be a brief cultural program as well as

