



International Society for Neuroethology

Newsletter/July 2026

International Society for Neuroethology

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The Prez Sez
Cindy Moss
President of the ISN



Dear ISN Friends and Colleagues,

The International Society for Neuroethology turns 45! The first ISN President was Ted Bullock, Vice-President was Bob Capranica, Secretary was Carl Gerhardt, and Treasurer was Jeff Camhi. Since our early beginnings, the ISN and the field of neuroethology have flourished, and we have a lot to celebrate.

While the field of neuroethology can be proud of its many important scientific advances, the current era of global challenges to science, equity, economic security, and peace have placed hardships on many of our members. As we weather the challenges, I encourage the ISN community to devote energy to support one another and focus on good science. Collaboration, communication, and pursuing the work we care about will help us move toward a better place.

Personally, it is hard for me to believe that my term as ISN President will end after the ICN in Vancouver this summer. I am humbled that you elected me to serve as your president, and my work in this capacity has been tremendously rewarding. I have made many new friends and collaborated with colleagues on exciting initiatives that will build and sustain our vibrant scientific community. I will continue to serve the ISN for the next two years as past-president, and I look forward to working closely with our new ISN President, Elke Buschbeck.

Over the past year, the ISN leadership team has worked hard to support early career investigators, explore new platforms for sharing research, and improve the financial health of the ISN. We have been in close communication with the ICN scientific program and local organizing committee chairs, who have been working tirelessly to create an exciting meeting in Vancouver. In addition, we are preparing for changes to the ISN Leadership Team. Three members of our team, one of our early career representatives and seven of our councilors are wrapping up their terms. Please join me in expressing deep gratitude for their commitment and service to the ISN.



Susan Fahrbach was the ISN Secretary for six years before stepping into the role of ISN Treasurer in 2022. She is retiring after the ICN in Vancouver. Please join me in thanking Susan for her generous service to the ISN community over the years and her

meticulous management of our finances. She has done an extraordinary job shepherding us through challenging financial times and has contributed meaningfully to strategic planning, fundraising, and other initiatives.



Gabby Wolff has served as ISN Secretary for eight years. She has played a central role on the ISN leadership team and works closely with our Early Career Representatives to coordinate mentoring and initiatives that

support students and postdocs. She also works with our

Social Media team to publicize and promote the activities of our members. Gabby prepares material for our website, biweekly Friday updates, and biannual newsletters. She is stepping down after the Vancouver ICN to focus on her teaching and research at Case Western Reserve University. Gabby has done an amazing job as ISN Secretary, which benefits all members of our society. Please join me in expressing deep gratitude to Gabby for all she's done for ISN over the past eight years!



Karen Mesce served as ISN Secretary 2010-2012 and Treasurer between the years 2012-2018, before being elected as President of the ISN. Karen served as president-elect (2020-2022), president (2022-2024), and now past-president (2024-2026).

With Karen's many years of service to the ISN comes deep knowledge of our history, which has proven invaluable in assessing new proposals and guiding future planning. Please join me in thanking Karen for her amazing contributions to the ISN!



Claire Rusch has served as an ISN Early Career Representative for the past six years, and her term is now ending. Claire has played a key role in the ISN. She contributed articles to each of the biannual newsletters, worked with her fellow ECR to run

the Mentorship Program, helped organize Future of Neuroethology webinars and early career events at the Lisbon and Berlin ICNs, and she started the Mentoring Office Hours with Eva Fischer and Angie Salles. Please join me in thanking Claire for her tremendous service to the ISN. We are now seeking volunteers to serve as our next Early Career Representative.

Please join me in thanking **ISN Councilors** who are finishing their terms in 2026: **Anna Stöckl** (University of Konstanz, Germany) **Eva Fischer** (University of California Davis, USA), **Basil el Jundi** (Norwegian University of Science and Technology), **Michiyo Kinoshita** (The Graduate University for Advanced Studies, SOKENDAI, Japan), **Jessica Fox** (Case Western Reserve University, USA), **Sanja Sane** (National Centre for Biological Sciences, India), and **Vielka Salazar** (Cape Breton University, Canada). These dedicated members of the ISN worked closely on strategic planning and new initiatives to strengthen our community. Many also worked on ISN Award Committees, which required the careful review of applications and selection of winners who are conducting outstanding research in the field of Neuroethology.

Future of Neuroethology Webinar Series

We are all grateful to **Angie Salles**, supported by **Lukas Weiss** and other members of the **ISN Inclusion and Diversity Committee** and **Early Career Representatives, Claire Rusch and Alex Winsor**, for organizing this superb webinar series. It provides a vibrant platform for early career investigators to share their latest discoveries and engage in discussions on a wide range of topics.



The spring Future of Neuroethology Webinar featured outstanding talks by **Drew Schrieiner** (Duke University), “A

synaptic locus for song learning,” **Shubham Rathore** (Janelia Research Campus), “Comparative insights into the molecular makeup of arthropod ‘camera-type’ eyes,” and **Benito Wainwright** (University of Saint Andrews, UK), “Convergent patterns of adaptation in a community of mimetic butterflies.”

Keep an eye out for announcements for upcoming Future of Neuroethology webinars in 2026.

Get ready for Vancouver!

The ICN in Vancouver takes place 40 years after the first ICN in Tokyo in 1986! Check out the 2026 [ICN website](#), where you’ll find a list of keynote speakers, photos of the beautiful venue, and housing information. **Marie Dacke** and **Michael Dickinson**, scientific program co-chairs, have put together a world-class scientific program featuring many more participant talks than in past congresses. They are introducing new formats designed to spark ideas, foster collaboration, and celebrate the diversity of research in our field.

For the first time, new findings will be showcased at the ICN in a Science Slam. What is a Science Slam? It is a fun event in which scientists present their research in short, entertaining talks. The goal is to make complex science accessible and engaging. We anticipate that the Science Slam will become a regular happening at the ICN. Don’t miss the very first one!

Doug Altshuler, local organizing chair and his committee, have thoughtfully booked meeting rooms best suited for the ICN, coordinated satellite symposium scheduling, and planned both a scenic dinner boat cruise and a final banquet at the Museum of Anthropology. All of these events are designed to combine science and fun. Please join me in expressing thanks to Marie, Michael, Doug, and the other members of the scientific and local

organizing committees, who have been working tirelessly to plan a vibrant scientific program and social events that will facilitate networking and strengthen our neuroethology community.

This year’s **Presidential Symposium** will be dedicated to the memories of two of our founding members, **Ed Kravitz** (1932–2025) and **Harvey Karten** (1935–2024). Speakers in the Presidential Symposium will reflect on the contributions and scientific impact of these two neuroethology giants. We also lost another deeply valued member of our neuroethology community, **Masashi Kawasaki** (1955–2025), and I direct you to the remembrance of Masashi in this newsletter, written by Bruce Carlson, a former member of Masashi’s lab.

Congratulations!



New Fellow of the ISN: Ron Hoy

This year, we recognize Ronald Raymond Hoy as a Fellow of the International Society for Neuroethology for his foundational contributions to insect and spider communication, the discovery of multiple insect ears, and other work demonstrating the remarkable diversity of insect auditory systems structure, function and evolution. He has also had a resounding impact on the field of Neuroethology, education, and research funding. We are thrilled to have Ron join the esteemed group of ISN Fellows!

The **Young Investigator Award** supports emerging researchers in the neuroethology community and recognizes doctoral graduate students and early postdoctoral fellows who have shown outstanding promise and made significant research contributions in any aspect of neuroethology. These awards are intended to highlight young investigators who represent the ISN of tomorrow. This year’s Young Investigator Awardees will present their research in a special session at the ICN on Monday, July 27, 2026.

Sam England (Museum für Naturkunde – Leibniz Institute for Evolution and Biodiversity Science, Germany) will give a talk titled “The ecology of electrostatics: pollination, parasitism, and predator-prey interactions.”

Andrew Matheson (Columbia University, United States) will give a talk titled “Environmental transitions drive plasticity of the body, behaviour, and nervous system of the newt.”

Shaked Palgi (Weizmann Institute of Science, Israel) will give a talk titled “Neuroethology on an island: from spatial coding to ecology.”

Mike Rauscher (Case Western Reserve University, United States) will give a talk titled “Low-frequency auditory stimuli provoke rapid ascent in free-flying *Aedes aegypti* mosquitoes.”

Congratulations to this year’s ISN Young Investigator Awardees!

The **Konishi Neuroethology Prize** is named in honor of Masakazu (Mark) Konishi, a leader in the neurobiological study of natural behavior. Konishi’s outstanding work on prey capture by owls and singing in songbirds continues to excite and inspire neuroethologists around the world. The Konishi Neuroethology Prizes recognize postdoctoral and early career investigators. Up to four prizes will be awarded to individuals at \$500 per recipient in Congress years. The cash prize may be used for research expenses or to offset costs associated with travel to the Congress of Neuroethology. **Congratulations to this year’s Konishi Prize winners: Angelo Forli** (Italian Institute of Technology, Italy) will conduct research on the neural mechanisms of regenerative intelligence, **Megan Freiler** (University of Minnesota, USA) will explore the role of the periphery in locomotor recovery following injury in the medicinal leech, **Matthew Lovett-Barron** (University of California, San Diego, USA) will investigate the neurobiology of collective behavior and **Saikat Ray** (Weizmann Institute of Science, Israel) will pursue real world neuroscience in meerkats.

The **Capranica Neuroethology Prize** is named in honor of Robert and Patricia Capranica and is awarded to a promising young investigator who is the author of a paper published online or in print during the previous calendar year that is judged to demonstrate outstanding scientific significance in the field of neuroethology. Selection criteria include the novelty of the scientific discovery, implications for technical advancement, and/or importance for the advancement of knowledge. **Congratulations to this year’s recipient of the Capranica Prize, Alexandra Yarger**, for her paper “Structural dynamics and neural representation of wing deformation,” published last year in the Proceedings of the National Academy of Sciences.

This year we also recognized many other ISN members with Heiligenberg student and postdoctoral fellow travel awards, along with Developing Neuroethology and Empowerment awards. Please see the awards announcements in the following section of the newsletter and join me in congratulating all!

ISN fundraising update

As many of you know, **Paul Katz (chair)**, **John Hildebrand**, and **Eric Warrant** have generously taken

on fundraising responsibilities for the ISN. Their first fundraising campaign honors the memory of past ISN President Ed Kravitz with an annual International Society for Neuroethology **Edward Kravitz Memorial Scholarship**. Ed was a strong supporter of summer courses at the Marine Biological Laboratory in Woods Hole, Massachusetts, which have been a tremendous asset to our neuroethology community. *A generous donation of \$50,000 from the Grass Foundation seeds this fund*, which will support a student or postdoc who enrolls in summer courses at the MBL, such as Neurobiology, Neural Systems and Behavior, SPINES, or Computational Neuroscience. Already, we have received generous donations from ISN members. We encourage the ISN community to donate to this fund, particularly those who were members of Ed’s lab, colleagues and collaborators, and alumni of MBL courses.



<https://www.neuroethology.org/donate/>

The ISN needs you!

We welcome your ideas and encourage you to volunteer for committees and new initiatives. If you are interested in getting more involved in the ISN, please let us know by reaching out to me (cynthia.moss@jhu.edu) or Elke Buschbeck (buschbek@ucmail.uc.edu).

In closing, I’d like to share some personal news. In February, I spent two weeks in Hong Kong, where I was a Senior Visiting Fellow at the Hong Kong University of Science and Technology. This gave me the opportunity to meet with collaborators and spend time with my daughter, son-in-law, and jubilant granddaughter, Isabel. I can’t resist sharing a few more photos so you can see how much Isabel has grown. Isabel will be joining me, my three children and my husband in Vancouver, so you may have a chance to meet them in person.



Some of you may not have heard that soon after I returned from Hong Kong, I underwent Whipple surgery at Johns Hopkins Hospital to remove a tumor from my pancreas. It was a complex surgery, but I was fortunate to be under the care of one of the world’s most skilled surgeons. After the procedure, the surgeon greeted my family with the

words, “We got it all,” which brought many sighs of relief. My recovery this spring was somewhat bumpy, but I am now feeling well and look forward to seeing many of you in Vancouver at the ICN in late July.

Stay strong! Wishing you all the best in your professional and personal lives.

Warmly,

Cindy Moss
ISN President



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



Ron Hoy
Cornell University

Ron, as he is fondly known by most, has been pivotal in our understanding of the insect auditory system and has published groundbreaking studies in this field in the best journals. Arguably his most significant contribution to our understanding of insect hearing has been the discovery of multiple ears, whether it is the cyclopean mantis ear published in *Science* (Yager and Hoy, *Science*, 1986) or the remarkable mechanically coupled *Ormia* ears (e.g. Robert et al, *J. Comp Phys*, 1998 and Mason et al, *Nature*, 2001). The legend is that in the Hoy lab the mantra was ‘an ear a year’. Neither was this merely a stamp collecting enterprise, Ron and his lab’s work established that insects have had at least 17 independently evolved ears in stark contrast to the single origin of vertebrate ears.

These findings were groundbreaking and led to a new active field in which his many trainees and other researchers studied these ears more closely, finding an incredible array of interesting biomechanical and physiological specializations. Without Ron’s work on independently evolved ears, we would not know that bush-cricket ears could have a frequency analyzing structure or that mosquitoes, flies and tree crickets could

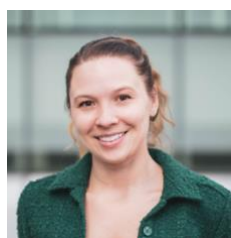
have active amplification systems. More recently, Ron turned his attention to what may yet be the most remarkable ear an arthropod has ever possessed, one that it can make and remake each day! His recent work on spiders has shown that spiders may use their legs to hear and indeed that they may even exploit their webs to assist the process (Zhou et al, *PNAS* 2022, Stafstrom et al, *Current Biology* 2020 and Shamble et al, 2016)!

Ron’s own work has contributed profoundly to our understanding of the remarkable diversity of insect auditory systems in terms of structure, function and evolution. I have mentioned his work on the structural contribution to directional hearing in tympanal ear of the parasitoid fly *Ormia ochracea* (e.g. Robert et al, *J. Comp Phys*, 1998 and Mason et al, *Nature*, 2001). He also showed that not only was this a remarkable evolutionary innovation but also that it was also a remarkable case of convergent evolution (Robert et al, *Science* 1992). Ron’s work showed that these flies moved away from the standard antennal ears used by most dipterans, evolved a new tympanal ear, which through convergence became remarkably similar to the ear of the crickets they were parasitising! Indeed, Ron has even made the discovery of a new type of convergence, that of harmonic convergence in the mosquito flight tones which males and females use to find each other in a busy swarm (Cator et al, 2009).

Ron has also made ground-breaking contributions to our understanding of insect sound perception. He was one of the first researchers to appreciate that even the supposedly ‘primitive’ insects with small brains, were nonetheless capable of some cognitive processing such as having the neural mechanisms for categorizing sounds (Wytenbach et al, *Science*, 1996) and pattern recognition in song which goes beyond simple template matching (Pollack and Hoy, *Science*, 1979).

-Natasha Mhatre

Capranica Neuroethology Prize

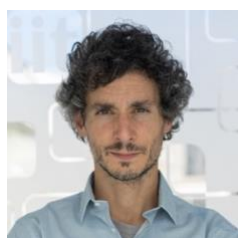


Alexandra Yarger

Dr. Alexandra M. Yarger is a research associate in the Department of Bioengineering at Imperial College London in Prof. Holger Krapp’s lab. She studies the neurobiomechanical basis of insect flight, integrating neuroethology, biomechanics, and computational modelling to understand how animals sense and respond to complex environmental cues. She received her PhD from Case Western Reserve University

in Prof. Jessica Fox's lab, where she demonstrated how flies use specialized mechanosensory organs to encode body rotations. She also described their function during walking and take-off. Her postdoctoral work in Dr. Huai-Ti Lin's lab, pioneered multiple techniques to characterize how dragonfly wings encode complex aeroelastic forces. She was a recipient of the International Society for Neuroethology Young Investigator Award in 2022 and a 2025 Grass Fellow at the Marine Biological Laboratory. Her work aims to leverage the natural diversity of insects to identify general biological principles with translational potential for engineered systems.

Konishi Neuroethology Research Awards



Angelo Forli

Angelo Forli is a Principal Investigator at the Italian Institute of Technology, where he leads a research group in systems and circuit neuroscience. Trained as a physicist, he received his PhD in Neuroscience and Brain Technologies, working on advanced two-photon methods for monitoring and manipulating neural activity with single-cell resolution. Supported by EMBO and HFSP fellowships, he pursued postdoctoral research with Michael Yartsev at the University of California, Berkeley. Combining wireless neural recordings with quantitative tracking of freely flying bats, he investigated how hippocampal circuits represent space, social interactions, and support memory during natural behavior. His laboratory uses a comparative neuroethological approach to investigate how neural circuits generate flexible, adaptive behavior in natural and changing environments. By integrating modern techniques across diverse animal models, the lab seeks to identify general principles of natural intelligence. Its current research spans the neural mechanisms of navigation and 'regenerative intelligence': the capacity of nervous systems to reorganize and restore adaptive behavior after injury.



Megan Freiler

Megan Freiler is a postdoctoral associate in Dr. Karen Mesce's lab at the University of Minnesota. Her research broadly examines how variation in neuromodulatory systems contribute to variation in adaptive behaviors. She earned her undergraduate degree at Washington University in St. Louis and her PhD in Evolution, Ecology, and Behavior at Indiana University. Megan is currently investigating how sensory neurons in the

peripheral nervous system remodel and contribute to the recovery of locomotion after nerve cord injury in the medicinal leech. Her work aims to explain how plasticity in nervous systems across timescales informs how animals respond to challenges. Outside of the lab, Megan enjoys running, hiking with her dog, and traveling with friends and family.



Matthew Lovett-Baron

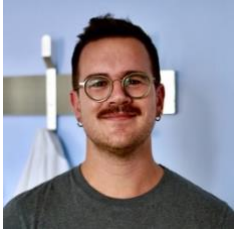
Matt Lovett-Baron obtained a BSc from Queen's University in Canada in 2009, a PhD in Neurobiology from Columbia University with Attila Losonczy in 2014, and was a postdoctoral fellow at Stanford University with Karl Deisseroth. He has been an Assistant Professor of Neurobiology at the University of California San Diego since 2020, where his lab studies the neural basis of collective behavior and social vision in the schooling glassfish *Danionella*, among other topics in neuroethology.



Saikat Ray

Saikat is a computational systems neuroscientist, using ethological methods to understand the neural basis of real-world animal behaviors. Starting from his PhD at the Humboldt University of Berlin, he has worked with multiple species, ranging from laboratory rodents to the smallest land mammals – Etruscan shrews, where he found how the ecology of an animal profoundly affects its brain. Saikat then moved to the Weizman Institute of Science for a postdoc and studied social groups of Egyptian fruit bats, finding how the hippocampal cognitive map also encoded the bats' social network. He then pioneered neural recordings in the wild – investigating how neurons involved in spatial navigation, like place cells, border cells and head direction cells work during real-world navigation – in freely-flying bats on a remote oceanic island. Now he has set his sights on working with meerkats – highly social animals that exhibit rich, natural behaviors including cooperation, communication, and collective decision-making. With this, Saikat is working to merge principles from behavioural ecology to systems neuroscience – to gain a mechanistic understanding of how animals, and their brains, behave in the real world.

Young Investigator Awards



Andrew Matheson

Andrew Matheson is a postdoctoral research scientist with Maria Antonietta Tosches in the Department of Biological Sciences at Columbia University. His current work investigates how newts adapt to living in aquatic and terrestrial environments as a model to understand how flexible the adult vertebrate nervous system can be. By combining behavioural, neural circuit, and transcriptomic analyses, he studies how nervous systems adapt to the distinct sensory and motor demands of life in the water versus on land. Previously, Andrew earned his PhD studying the neural circuits for olfactory navigation in *Drosophila* with Katherine Nagel at NYU. He was first introduced to neuroethology as an undergraduate at McGill University, where he studied songbird vocal communication with Jon Sakata and earned a BSc in Computer Science and Biology.



Sam England

Sam is currently a postdoctoral research fellow at the Museum für Naturkunde Berlin, Germany, after previously working under Dr Lauren Sumner-Rooney at the same institute. Prior to this, Sam completed his PhD in Biological Sciences at the University of Bristol, UK, supervised by Prof Daniel Robert, and before that a Masters in Physics at the University of Exeter, UK and the University of Wollongong, Australia. Sam's research spans zoological physics, investigating the ecological role of electrostatic forces, animal vision, and invertebrate biomechanics.



Shaked Palgi

Shaked Palgi is a PhD student in the department of Brain Sciences at the Weizmann Institute of Science, Israel, where he also did his M.Sc under the supervision of Prof. Nachum Ulanovsky. Prior to his time at the Weizmann Institute, he completed his B.Sc. at the Sagol School of Neuroscience at Tel-Aviv University, studying Biology and Linguistics. Shaked's research focuses on the neuroethology of navigation in real-world contexts, using the Egyptian fruit bat as his animal model. He conducts electrophysiological recordings in freely-flying bats, both in laboratory conditions and recently also outdoors - on a remote oceanic island off the shore of Tanzania.



Michael Rauscher

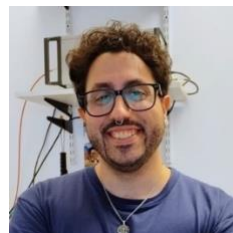
Mike studied Neuroscience, Biology, and Philosophy at Oberlin college, graduating with a B.A. in 2011. After some years, they returned to research, studying sensory processing and multisensory integration in *Drosophila* at the University of Arizona in Tucson and Case Western Reserve University in Cleveland. After completing a doctoral dissertation in Biology in 2021, Mike stayed on at Case Western, pursuing a post-doctoral appointment studying auditory-mediated escape behavior in Mosquitoes in the laboratory of Dr. Gabriella Wolff. They use high speed videography and quantitative behavioral methods to investigate sensorimotor transformations mediating insect flight control.

Developing Neuroethology Awards



Dasyam Pranay

I am a PhD student in Dr. Joby Joseph's laboratory at the Centre for Neural and Cognitive Sciences (CNCS), University of Hyderabad, India. My research focuses on understanding how internal behavioral states influence visually guided escape behavior in the grasshopper *Hieroglyphus banian*. Using behavioral experiments, electrophysiology, and computational modeling, I study how neural circuits process sensory information to generate appropriate motor responses. My current work shows that many of the failures in the jump escape response, previously thought to arise from neural noise, instead reflects state-dependent neuronal modulation. More broadly, I am interested in understanding how neural circuits give rise to intra-individual variability and decision-making.



Agustin Eleazar Lara

I am Agustin Lara, a PhD student at the Institute for Physiology, Molecular Biology, and Neurosciences (IFIByNE) in Buenos Aires, Argentina. I work in the Laboratory for Sensory Plasticity at the School of Exact and Natural Sciences, University of Buenos Aires, led by Dr. Fernando Locatelli. My research aims to understand whether aversive and appetitive olfactory information is segregated or transmitted in parallel through two neuronal tracts in the honey bee brain. To address this, I use techniques such as calcium imaging and

behavioral assays to explore how olfactory information processing relates to behavioral output.

Empowerment Awards



Adriana Migliaro

I am an Assistant Professor of Neuroscience at Universidad de la República in Uruguay. I graduated at Facultad de Ciencias (Udelar) and earned my PhD at Pedeciba (Udelar), in Montevideo, Uruguay. I study how the environment shapes brain function and behavior, focusing on circadian rhythms and the influence of light and temperature cycles on neural circuits. I work with South American electric fish which are native to my country, and this allows me to combine field work and lab experiments (as seamlessly as possible), to investigate brains in their natural context. I am passionate about teaching neuroscience and neuroethology and enjoy sharing the beauty of studying wild brains in the natural world.



Neetash Mysuru

I am Neetash, a doctoral student working in neuroethology of vocal communication in the Vallentin Lab at the Max Planck Institute for Biological Intelligence in Seewiesen. I study vocal development in juvenile male zebra finches, focusing on changes in calls and call-response timing across development shaped by social experience. I use behavioral experiments and context-specific developmental datasets to study the structure and variability of natural behavior, with the goal of linking behavior to underlying neural and computational mechanisms. I have been deeply engaged in the field of neuroethology since my Master's at IISER Thiruvananthapuram, India, where I investigated olfactory conditioning and learning in bees. What began as a simple opportunity during my time as a field assistant at the MPIO led to a research project where I studied group echolocation in horseshoe bats. This experience deepened my curiosity to understand how complex communication systems emerge and are continually shaped by social interactions in freely behaving animals.

Heiligenberg Postdoc Travel Awards

Grace Capshaw

Johns Hopkins University

Research topic: Auditory resistance to noise damage in the FM-echolocating fruit bat, *Carollia perspicillata*

Susanne Bahl

Free University Berlin

Research topic: Foraging behavior of frugivorous bats using multisensory information

Eliza Jaeger

The Rockefeller University

Neural and nutritional mechanisms regulating division of labor in ant alloparental care

Alayna Mackiewicz

University of Washington

Research topic: Behavioral and neural correlates of magnetic sensing in poison frogs

Paul Cl  men  on

University Grenoble Alpes, CEA Leti

Research topic: Insect-inspired olfactory navigation using an analog-constrained ring attractor and CMUT sensors

Heiligenberg Student Travel Awards

Aditi Agarwal

Max Planck Institute for Biological Intelligence

Research topic: HVC gates the sensory representation of the tutor song in basal ganglia Area X during zebra finch vocal learning

Usan Dan

University of Illinois Urbana-Champaign

Research topic: Conserved mechanisms influence the transition to and evolutionary loss of parental care

Zaria George

University of Illinois - Chicago

Context-driven behavior operates independent of physiological responses in *R. aegyptiacus*

Alexandra Gurgis

Case Western Reserve University

Research topic: Brains, Eyes, and Bioluminescence: Comparative Neuroanatomy in Ostracods

Zichen He

Duke University

Research topic: Neural mechanisms of visually driven action selection in larval zebrafish

Anupama Nayak Manel

International Max Planck Research School

Research topic: A moth's point of view – Form and function guide innate flower symmetry preference

Cailyn McKay

Western University

Research topic: Heat stress during pupal development affects olfaction in the armyworm moth

Victoria Saltz

Columbia University

Research topic: Experience-dependent sensory representations in the amphibian brain

Mackenzie Seymour

Illinois State University

Research topic: Acclimation-induced changes in neuropeptide signaling stabilize neuronal circuit activity

Lorenzo Micolucci

Max Planck Institute for Biological Intelligence

Research topic: Neural mechanisms of alarm call production in wild free-living songbirds

Alicia Strosche

Max Planck Institute for Brain Research

Research topic: When danger strikes: midbrain circuits for defensive behavior execution



REMEMBERING MASASHI KAWASAKI



ISN member **Bruce Carlson** pays tribute to the lasting impact of Masashi Kawasaki's life and scientific career.

Masashi Kawasaki, an active member of the International Society for Neuroethology, died tragically in a car accident on May 18, 2025. He was an inspiring researcher, teacher, mentor, and friend. He was a beloved member of the electric fish community. He is sorely missed by colleagues, family, and friends.

Masashi was born on June 1, 1955 in Tokyo, Japan. He grew up mostly in the seaside town of Chigasaki, Japan. His early interest in animal behavior developed from his proximity to the sea and the fish tanks he set up at home. The awarding of the Nobel Prize in Physiology or Medicine to Konrad Lorenz, Niko Tinbergen, and Karl von Frisch in 1973 for their pioneering work in ethology provided timely inspiration. After graduating with a bachelor's degree in biology from Waseda University in Tokyo in 1979, Masashi went on to obtain a PhD at Sophia University in Tokyo, where he studied visual physiology in fishes with Kiyoshi Aoki and Ken-Ichi Naka.

While pursuing his PhD, Masashi married Yasuko in 1982. They first met in high school, when they were members of the same music club. Their first child, their daughter Tomomi, was born a year later.

After receiving his PhD in 1983, Masashi joined Nobuo Suga's lab at Washington University in St. Louis. In collaboration with Dan Margoliash, he performed electrophysiology experiments in freely vocalizing bats, hanging the bats outside of a laboratory window to eliminate extraneous echoes (that formerly open space is now occupied by a building housing the Psychological & Brain Sciences department). This groundbreaking work demonstrated that the combination sensitivity and delay-tuning of cortical neurons originally found in response to synthetic pulses and echoes also occurred in response to real self-generated sound pulses and their resulting echoes.



After 2 years in the Suga lab, Masashi moved on to a second postdoctoral position with Walter Heiligenberg at the Scripps Institution of Oceanography at the University of California, San Diego. There he began his research on weakly electric fish. Masashi and his collaborators

performed a series of elegant experiments that elucidated the neural mechanisms underlying the generation of electric signal modulations in gymnotiform fishes. Using a combination of tract-tracing and glutamate iontophoresis, they demonstrated that distinct populations of pacemaker neurons drive different types of signal modulations, mediated by different classes of glutamate receptors. In a separate line of research, Masashi and fellow postdoc Gary Rose studied the electrosensory responses of central neurons involved in the jamming avoidance response, revealing remarkable sensitivity to timing differences as short as 1 ms. While in San Diego, Masashi and Yasuko had their second child. Their son Daigo was born in 1988.

Masashi joined the faculty of the Biology Department at the University of Virginia in 1990. There, he received tenure and then promotion to full professor. He remained at UVa until his untimely death. Masashi's major line of research when he started his lab at UVa was deeply comparative in nature, portending a more recent flourishing of comparative neuroethology research. Work from Walter Heiligenberg's lab had revealed the computational algorithm and neural mechanisms underlying execution of the jamming avoidance response in the gymnotiform fish *Eigenmannia*. Masashi sought to address the same questions in the distantly related mormyroid fish *Gymnarchus*, which has independently evolved electrosensory and electromotor systems. This seminal work revealed that *Gymnarchus* uses the same computational algorithm for performing the jamming avoidance response and similarly encodes the required sensory information using analogous peripheral electroreceptors as in *Eigenmannia*. Even more remarkably, however, Masashi and his colleagues discovered that the central processing of this information involves different neural mechanisms operating in different parts of the brain compared to *Eigenmannia*. This was an important series of comparative studies that illustrated how the same behavior can result from different neural mechanisms arising as a consequence of separate evolutionary histories.

Masashi was a dedicated and inspiring teacher and mentor. He was especially passionate about his Animal Behavior Laboratory course, which was very popular among the undergraduate students at UVa. In addition to his research, teaching, and mentorship, Masashi was a gifted musician. Both of his parents were professional musicians, and he learned to play piano at an early age. While at UVa, he learned to play the double bass and later joined the Charlottesville Symphony. His skills as an electrophysiologist and musician converged when he built himself an electronic double bass from scratch that could be taken apart and safely stored in his checked luggage.



Masashi Kawasaki's extraordinary contributions to science, to his students, and to his mentees have left a deep and indelible mark on the neuroethology community and beyond. The International Society for Neuroethology sends its deepest condolences to his wife Yasuko, his daughter Tomomi, his son Daigo, and his friends and colleagues. He will be greatly missed.



A CALL FOR THE NEXT ISN TREASURER

ISN Treasurer **Susan Fahrbach** describes how the Treasurer role is changing soon and encourages members to be more engaged in ISN by stepping into this leadership position.

I believe all members of the ISN serve our society through their research, teaching, writing, and sharing their general enthusiasm for neuroethology with anyone who will listen. This article is addressed to those who resonate with that mission and who may be interested in getting involved more directly with the leadership of our society. As part of my transition to retirement, I am stepping down from the position of ISN Treasurer after the Vancouver Congress. This departure opens a vital leadership opportunity within the ISN. I shared my retirement timeline at the Berlin Congress, but to date no member has self-nominated.

I suspect the lack of candidates goes beyond the universal struggle of being overcommitted. I believe it reflects lack of knowledge of what the Treasurer does beyond issuing occasional financial reports. Fortunately for the next Treasurer, the ISN is transitioning to a new model of society organization that replaces the old attitude of "volunteers can do everything" with an updated partnership between the ISN and our professional management company, KnowledgeWorks Global Ltd

(www.kwgglobal.com). Here I outline the duties of the Treasurer and describe the additional support we will have provided by our management company going forward.

First, the role of the Treasurer is about far more than spreadsheets! The Treasurer works closely with the other members of the ISN Executive Committee (President, Secretary, Past President, President Elect) to shape ISN policies. I've truly enjoyed my time on the Executive Committee. Far from being dry, our discussions (by email and Zoom) are lively and free-flowing. We operate on a completely level playing field and every committee member's perspective is valued. I am inspired by the caring stewardship ISN leadership provides for our society. The bottom line (pun intended) is, as Treasurer, you will be central to every important conversation that concerns the ISN and thus have the opportunity to shape the society even beyond the immediate responsibilities of the Treasurer.

Second, it is true that the specific duties of the Treasurer are related to ISN finances, including paying bills, keeping a watchful eye on accounts, and filing reports to maintain the ISN's tax-exempt non-profit status. This turned out to be more time-consuming than I bargained for! I did not initially understand the differences between managing personal and business bank accounts, and I did not appreciate the sheer number of payments the ISN makes to individual members in the form of prizes and travel awards. I won't pretend there wasn't a learning curve, especially regarding international wire transfers. I did everything I needed to do, but I worried about making mistakes that would prove costly to the ISN. Don't let this deter you from considering this position, however – read on to learn about changes being implemented that will make the role of the next Treasurer more policy-oriented and less focused on the day-to-day operation.

After I shared my experiences with the other members of the Executive Committee, we took the decision to contract for additional financial management support from the professionals at KGL. Once the transition is completed this summer, the next Treasurer will still have responsibility for oversight of ISN accounts and for compiling information but won't be writing checks, initiating wire transfers, or filing tax returns. Investing more ISN funds in professional management services is certainly a shift but relying on volunteers is not a viable model for a 21st century international scientific organization. Another change is that the ISN is working on implementing Directors and Officers Insurance, protecting the Executive Committee against the risks of legal action or fraud. This will allow our next Treasurer

to be able to lead with confidence and without the need to worry about liability.

What are the attributes of an effective ISN Treasurer? Some represent what I lost when I became Professor Emerita of Wake Forest University on June 30, 2026: the Treasurer needs a secure office with access to reliable internet, photocopiers, scanners, and general support for computing. I take these for granted on campus, but they will not be available to me in my little home office in the corner of my living room! Second, the Treasurer needs to be reliably responsive, both to discuss policy with the other officers and to give quick approval for financial transactions. Third, the Treasurer should be comfortable with online management of investment accounts, as the longer-term assets of the ISN are held at the Schwab financial services company. Finally, because ISN is a California-incorporated non-profit subject to U.S. tax compliance, navigating this role effectively necessitates a Treasurer based in the United States.

I would not encourage someone in the early stages of an academic career to consider taking on the role of ISN Treasurer, unless one is very sure (I'd advise getting a statement in writing) that a society leadership position will support advancement and/or tenure. By contrast, for those transitioning to Full Professor, the evidence of international collaboration the role of Treasurer provides may be ideal, and a great opportunity to build out valuable connections. From my personal experience, this position is a great fit for a long-time society member interested in deeper involvement in advancing global neuroethology. Want to learn more? Contact me at fahrbach@wfu.edu.



CLAIRE'S SUMMER READING LIST

Early Career Representatives Claire Rusch shares a curated list of books that shaped her scientific mind and some that she hopes to read before the fall.

Books have always been a huge part of my life. I have old memories of staying up after bedtime, with a tiny lamp, and continuing to read because I needed to know what was going to happen next. It is no surprise then that books have shaped how I think about being a scientist, the purpose of science, and our own field, neuroethology. I am not talking about the necessary and sometimes awesome textbooks, but the ones I picked up on the side: science books that weren't part of a syllabus, popular writing that turned out to be quietly profound, and the occasional completely unrelated book that kept me thinking.

Now, with two young children, my reading happens in fragments. On the best days, I can read a couple of pages before falling asleep or a chapter of an audiobook on the way from daycare to work. And on rare but fantastic occasions, I can read a full book while travelling to a conference (though that time tends to be swallowed by last-minute PowerPoint changes en route). Suffice to say, "Summer reading" is, for me, more of an aspirational genre than an actual practice.

So here is my summer reading list. Half of it is books I've already read, some long ago, some more recently, but all leaving a long-standing impression. The other half is what I'm telling myself I'll get to this summer. Whether that actually happens with a four-year-old and a toddler in the house is, frankly, an open question. But a scientist can dream.

Books I have read and still think about:

***An Immense World* by Ed Yong**

This is the book I hand to anyone who asks why I study animal behavior or anyone who feels all science should be applied and go toward some tangible human benefit (so, basically more than half of my close friends and family). Yong makes you feel the strangeness of other animals' perceptual worlds in a way that makes the question "how does that work?" feel incredibly important. The Umwelt concept in a nutshell.

***Lessons from the Lobster* by Charlotte Nassim**

A portrait of Eve Marder's career built around thirty neurons in the lobster stomach. A portrait of a famous and contemporary woman in science. What stayed with me wasn't the neuroscience but the model of how to think: letting data drive the questions rather than testing hypotheses. And of course, the beauty of those thirty neurons.

***The Beautiful Brain — the drawings of Santiago Ramón y Cajal* by Larry W. Swanson, Eric Newman, Alfonso Araque and Janet M. Dubinsky**

There's something deep about those ink drawings, a reminder that sustained observation is still the foundation of everything we do, no matter how many electrodes we add. In this book you can marvel at the beauty of the brain and follow Cajal's scientific journey through Spain in the late 19th and early 20th centuries.

***You Look Like a Thing and I Love You* by Janelle Shane**

We have to accept that AI is now part of our job: our students are using it, journals are using it, our peers are using it. New tools keep emerging: some I use happily while some I regard with a mix of terror and apprehension. This book isn't recent, but it's a genuinely fun way to get a better sense of how AI works, how simple rules give rise to complex behavior, and why things go spectacularly wrong when the training set doesn't match the real world. Sound familiar?

***Blindspot: Hidden Biases of Good People* by Mahzarin Banaji & Anthony Greenwald**

Essential reading (arguably mandatory) for anyone who designs experiments, evaluates candidates, or sits on a committee (which is to say, all of us). Our minds harbor biases we are genuinely unaware of, and good intentions are not sufficient to correct them. Uncomfortable in the best possible way.

***What If? / What If? 2* by Randall Munroe**

Completely unrelated to neuroethology but all about how one answers silly (or not so silly) questions with scientific tools and data. Sometimes the best thing you can do for your scientific mind is let it play with an entirely different set of questions. These books are immensely fun. Munroe takes absurd hypothetical questions with complete seriousness and the result is both hilarious and a masterclass in order-of-magnitude thinking.

Books I really, really want to find time to read before fall, or the end of the year, or maybe before next summer at least:

***Neuroethics: The Implications of Mapping and Changing the Brain* by Walter Glannon**

In the last five years, we have made mind-blowing advances in our ability to record and intervene in the brain. In a world of brain-machine interfaces and AI, where some enormously wealthy people dream of human enhancement, ethical questions are more pressing than ever. Something we all need to think about, as people, citizens, and scientists.

***This Way Up: When Maps Go Wrong* by The Map Men (Jay Foreman and Mark Cooper-Jones)**

Entirely off-topic, this is my beach read: the one that shouldn't require me to think too hard. And yet, I love how maps reflect the opinions and beliefs of the people who draw them, and how much you can learn about a place by looking at how it has been represented. A book about cartographic errors turns out to be a book about the

consequences of how we choose to see the world. Maybe not so off-topic after all.

To conclude, I'd genuinely love to hear what's on your reading list, what book left a strong impression, or what you're excited to find time to read this summer. Don't hesitate to send me an email (claire.rusch@research.fchampalimaud.org) with your recommendations.

Happy reading, and good luck to everyone negotiating their summer list around small children, fieldwork, grant deadlines, graduation, paper submissions, or any combination of those.

And because you can never have too many books, Alex Winsor, your other early career representative, has also shared his summer reading list and recommendations in this issue. Check his out too!



ALEX'S SUMMER READING LIST

Early Career Representative **Alex Winsor** shares his own book recommendations.

I have always been fascinated by nature and the plants and animals that inhabit it. Throughout my PhD, I found that time was scarce, and I had to spend much of it reading about the specific topics and papers most closely related to my central project. However, I always nurtured an appreciation for the natural world and came to realize that so many different branches of science were doing interesting things, and that disparate fields are far more connected than I had appreciated. At the same time, there was simply not enough time or energy to read papers across all of these fields. I found that popular science books offered a way to reconnect with my childhood passion while also enriching my scientific training. These books translate complicated topics across disciplines for a broader audience. I would also like to share a list of books that I have read and enjoyed, as well as a couple books that I plan to read over the summer:

Just like for Claire, *An Immense World* by Ed Yong was a pivotal read. This book explores the personal sensory environments of many different animals, and it gave me a greater appreciation for how important senses are beyond vision, my topic of study. It is an immensely beautiful book, and I would recommend it to anyone interested in how animals perceive the world. My favorite case study from the book is that seals have whiskers that are so elegantly tuned to vortices of water that they can track the ghostly path of a fleeing fish through touch alone.

I highly recommend reading *Natural Neuroscience* by Nachum Ulanovsky. With recent advances in technology that allow us to obtain high-density neural recordings in freely moving animals, and new ways to track animal behavior using machine learning, we are better able to ask questions about how animals behave in nature without overly restricting their behavior. All of these new technologies are also met with advances in computation that allow us to analyze these newly generated, large datasets. As neuroethologists, I believe our field has already embraced finding unique animals to ask unique questions about specialized behaviors, but this book makes the argument that there is still much to be learned from common laboratory animals using these new technologies.

Are We Smart Enough to Know How Smart Animals Are? by Frans de Waal. This was also a great read. Whether it be the incredible problem-solving abilities of crows, the complex social lives of elephants, or the spread of culture in the great apes, this book makes a compelling argument that we really need to understand how animals live in order to design experiments that best probe their abilities.

My next recommendation is *The Mind of a Bee* by Lars Chittka. The author summarizes a lifetime of work on bees, showcasing their complex behavior as they forage for flowers, communicate with each other, build complex geometric hives, and even solve problems that they have never encountered in their evolutionary history, such as pulling strings for reward. I felt this book showed that we can learn so much about animal brains through cleverly designed behavioral experiments alone, and that invertebrates have a lot more complexity than we have previously given them credit for.

The next book I recommend is *Great Adaptations: Star-Nosed Moles, Electric Eels, and Other Tales of Evolution's Mysteries Solved* by Kenneth Catania. This book discusses the author's discoveries into the fascinating sensory appendages of moles that rely on highly acute tactile sensors, electric fish that can stun their prey, and even parasitoid wasps that deliver an incredibly precise venomous blow to their cockroach hosts to disable their movement. It also contains many stories of field work and travel that other scientists can relate to, as well as failed experiments and the many iterations required to make them work.

My final recommendation is *A Taste for the Beautiful: The Evolution of Attraction* by Mike Ryan. This book catalogs many of the ornamentations and colors that animals have, as well as how they are discerned during mate choice. The author spends a lot of time discussing

túngara frogs, which use calls to attract mates while also avoiding predation by bats.

Finally, two books are still on my summer reading list. The first is *Why Machines Learn: The Elegant Math Behind Modern AI* by Anil Ananthaswamy. As new computational tools become increasingly important in biology, I am interested in gaining a better understanding of the mathematical ideas behind them.

The final book on my reading list is *Brains Through Time: A Natural History of Vertebrates*. This book outlines the neuroanatomy and function of many different animal nervous systems across the evolutionary tree. My first impression is that it feels like the sprawling monographs written by natural historians in the previous century. So much of my work has focused on invertebrate brains, but I have developed a much greater interest in the vertebrate brain.

As I transition into the postdoc on a new research topic, obtaining further breadth feels ever more important. Please reach out if you have any recommendations! I'd also be happy to chat about these books and others at ICN in Vancouver this July.



ICN PROGRAM HIGHLIGHTS

We are all looking forward to seeing each other in Vancouver and catching up on all the ground-breaking work being done in neuroethology! The ICN program book is now posted on the conference website and the abstract book will be posted shortly. All conference delegates are encouraged to check these documents for conference planning. If there are any errors, please send corrections to the LOC chair Doug Altshuler (doug.altshuler@ubc.ca). Final versions of the documents will be posted on July 24. Here are some program highlights at a glance.

- Sunday, July 26
 - 5pm – Reception and Opening Ceremony
- Monday, July 27
 - 9am - Presidential symposium
 - 11am - Young Investigator symposium
 - 2pm – Huber Lecture: Catherine Dulac
 - 6pm – Early career icebreaker social

- Tuesday, July 28
 - 9am - Plenary: Joe Parker
 - 2pm – Plenary: Ajay Narendra
 - 6pm – Science Slam
- Wednesday, July 29
 - 9am – Plenary: Lisa Fenk
 - 1:30pm – Community and Inclusivity Event
 - 2pm – Heiligenberg Lecture: Auke Ijspeert
- Thursday, July 30
 - 9am – Plenary: Laura Quintana
 - 12:30 – ISN Council Meeting
 - 2pm – Plenary: Emily Standen
 - 6pm – Boat Cruise
- Friday, July 31
 - 9am – Plenary: Maude Baldwin
 - 2pm – Plenary: Michael Long
 - 4:45pm – ISN Awards and future ICN venues
 - 6pm - Banquet

