



International Society for Neuroethology

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International Society for Neuroethology
P.O. Box 1897
Lawrence, KS 66044, USA
Website: <http://neuroethology.org/>
Facebook: <https://www.facebook.com/groups/neuroethology/>
E-mail: isn@allenpress.com

PHONE: +1-785-843-1235
(or 1-800-627-0629 Ext. 233)
FAX: +1-785-843-1274

ISN Officers

President: Peter Narins, Department of Integrative Biology and Physiology, 621 Charles E. Young Drive South, Box 951606, Los Angeles, CA 90095-1606 USA
PHONE: +1-310-825-0265 FAX: +1-310-206-3987
E-mail: pnarins@ucla.edu

Treasurer: Karen Mesce, Department of Entomology and Graduate Program in Neuroscience, University of Minnesota, 219 Hodson Hall, 1980 Folwell Avenue, Saint Paul, MN 55108 USA
PHONE: +1-612-624-3734 FAX: +1-612-625-5299
E-mail: mesce001@umn.edu

Secretary: Susan Fahrbach, Department of Biology, Wake Forest University, Box 7325, Winston-Salem, NC 27109 USA
PHONE: +1-336-758-5023 FAX: +1-336-758-6008
E-mail: fahrbach@wfu.edu

Past-President: Alison Mercer, Department of Zoology, University of Otago, P.O. Box 56, Dunedin, NZ
PHONE: +64 3 479 7961 FAX: +64 3 479 7584
E-mail: alison.mercer@otago.ac.nz

President-Elect: Catharine Rankin, Department of Psychology, Kenny Room 3525 – 2136 West Mall, University of British Columbia, Vancouver, BC Canada V6T 1Z4
PHONE: +1-604-822-5449 FAX: +1-604-822-7299
E-mail: crankin@psych.ubc.ca

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The Prez Says

Peter Narins
President of the ISN

Greetings from California!

As you may know, the **Acoustical Society of America** had its 170th meeting in Jacksonville, FL in early November. ISN member **Andrea Simmons** (Brown University) and I (UCLA) co-organized a Special Session at that meeting jointly sponsored by the Animal Bioacoustics and Psychological & Physiological Acoustics Technical Committees titled *Comparative Neurophysiology of the Auditory System: Session in*

Honor of Albert Feng. **Albert Feng** served as ISN Treasurer from 1992 – 1998, and as ISN President from 2002 – 2004.



Albert retired from the University of Illinois at Urbana-Champaign after a long and distinguished career in 2010, but continues to do field research in China. Many of Albert's former graduate students, post docs, colleagues, and collaborators participated in the symposium and honored him with their technical presentations and their memories and kind words about him. It was clear that Albert was deeply moved and most appreciative of the well-deserved attention paid to him that day. One of his former Ph.D. students, **Rama Ratnam**, now a Senior Research Scientist at the Beckman Institute for Advanced Science and Technology at the University of Illinois, remarked about his former mentor: *Irrespective of which culture we belong to, East or West, we respect and honor our mentors. That is perhaps one of the finest things about academic tradition anywhere in the world. However, as an ethnic Indian I was especially pleased and honored because Al is my Guru, and in my mind he has a special and exalted status.* We all wish Albert a productive and happy retirement.

Update on the ICN Presidential Symposium

As outlined in the June 2015 ISN Newsletter, the ISN is instituting a new feature – a **Presidential Symposium** – at our biennial congresses, starting with the ICN2016 in Montevideo, Uruguay. The Presidential Symposium consists of six high profile talks by speakers especially invited by the current ISN President, each of which represents an area of broad neuroethological interest, a model system with deep neuroethological roots, or a recent novel finding that broadens our understanding of the field. The Presidential Symposium will be the first public event of the ICN and is designed to feature some of the most outstanding public speakers working in contemporary neuroethology.

Since the original announcement of the first Presidential Symposium, one of the invited speakers, ISN member **Mark Bee**, had to drop out. Mark and his wife are expecting their first child on the very day of the

Presidential Symposium! Mark will be replaced by **Baldomero (Toto) Olivera** from the University of Utah. Toto will present an exciting talk titled *Venomous fish-hunting cone snails: Integrating behavior with genetics and neuropharmacology*.

As you read this issue of the newsletter, keep in mind the ISN tradition that we always welcome your comments, suggestions, and ideas for how to improve our society. You can send me an e-mail directly at pnarins@ucla.edu, and I shall try and answer you as quickly as possible. As we begin 2016, I wish you all a happy new year and hope you once again have a chance to enjoy the company of your families and friends.

With best wishes,

Peter Narins



IN MEMORY OF ALLISON DOUPE

ISN members **Darcy Kelley** and **Russ Fernald** graciously shared their memories on the occasion of the one year anniversary of the passing of our colleague and friend, ISN member **Allison J. Doupe**. Allison, who held both MD and PhD degrees, was Professor of Psychiatry and Physiology at the University of California, San Francisco. She is sorely missed both by those who knew her personally and by those inspired by her research contributions.



Allison Doupe, a remarkable neuroethologist and a source of inspiration for her colleagues, students and post docs, died October 24, 2014. A year has not dimmed our high admiration for her fight to survive this last bout with cancer and to remain on the planet with her husband **Michael Brainard** and their boys. Our appreciation of Allison as a person, as a friend and mentor, and as a creative neuroscientist, continues to grow. Allison's scientific contributions to understanding how vocal communication signals are learned have been justly celebrated both in print (e.g. Barondes and Stryker, 2014; Insel and Landis, 2014) and online (see <https://www.youtube.com/playlist?list=PLWXu8EHZjBYr8PkAexNelYRXygrjqwWwI>). The anniversary of her death reminds us of how extraordinary Allison was as a person. Here we share some of our favorite memories.

DK: I still vividly remember Allison describing her thesis research with **Paul Patterson** on small, intensely fluorescent, autonomic neurons the first time I met her in 1982. It was terrific news that such a talented scientist

chose to join the bird song research community and also to continue the practice of medicine as a psychiatrist.

Joining the lab of **ISN Fellow Mark Konishi** to learn about bird song led to a long and productive collaboration. Once, Mark was invited to give a talk in French at a meeting in Paris and sent Allison. Wasn't a lecture in French daunting; how did she manage? Allison did a run through with her Parisian uncle who said the talk was fine except for her terrible Canadian accent. That "terrible" accent was actually very charming! Allison was extraordinarily meticulous about acknowledging the work of her lab members and all of her colleagues, even random suggestions from members of the audience about possible experiments and ideas. Her strong sense of science as a communal activity was a large part of what made Allison a valued mentor and friend.

RF: I first met Allison at the Neuroethology meeting in Cambridge where **Darcy Kelley**, **Martha Tobias**, and I went punting on the Cam. I began by pushing us along, trying to not get the pole stuck in the river bottom. In the process, I became as soaking wet as if I had actually fallen in the river. From the back of the boat, Allison provided advice and incredibly funny asides about my skill level. Given the communal hilarity, we were lucky that we didn't capsize!

A few years later, my lab held joint lab meetings with Allison's and joked that it was like a couple dancing but with one doing the tango and the other the polka! Following an afternoon of science and a dinner with ample wine, we played charades. Allison, a keen competitor in the game, claimed we must have practiced to get such difficult portrayals as "radiator" and "hippocampus."

Allison enriched our lives. All of her attributes made Allison a truly spectacular neuroethologist. She was too good – both as a scientist and as a person – to have died so young. We miss her.



IN MEMORY OF ANNEMARIE SURLYKKE

ISN member **Cynthia Moss**, together with **Jakob Christensen-Dalsgaard**, **Signe Brinkløv**, and **Lasse Jakobsen**, submitted the following remembrance of our dear ISN colleague, **Annemarie Surlykke**. Thanks to **Cynthia Moss** for sharing the accompanying photos.

Annemarie Surlykke, active member of the International Society of Neuroethology, passed away on July 28, 2015. She was a scientific leader, teacher, dear friend, loving wife and devoted mother, and a wide circle of family, friends and colleagues deeply mourns her loss.



Annemarie was born on October 21st, 1955. She completed her MSc degree at the University of Southern Denmark (SDU) in Odense in 1982, was appointed as associate professor in SDU's Department of Biology in 1987, and promoted to full professor in 2011. She was internationally renowned in the field of neuroethology, fully engaged in both teaching and research.

Annemarie was one of the rare members of the neuroethology research community to study both echolocating bats and insects, not only in the laboratory but also in the field. Her work spanned research on species inhabiting tropical and temperate regions, and she employed methods ranging from behavior to neurophysiology. Annemarie made major contributions to our understanding of hearing in animals that produce and process ultrasonic signals. She also played an active role in the Center for Sound Communication in Denmark, which is dedicated to research and teaching in Animal Bioacoustics. She collaborated with scientists around the world, in Japan, Taiwan, Panama, Germany, Sweden and the US.

Annemarie's research on bats explored the limit and operation of hearing for the detection, localization and perception of echo returns of the animal's sonar signals. Her published work includes acoustic studies of sonar signals produced by bats under laboratory and field conditions, and behavioral studies of adaptive sonar signal call design. Her early research in this area examined the role of arctiid moth clicks on sonar ranging in bats, forward and backward masking of sonar target echoes, and auditory integration time. She recently co-edited a book on animal sonar (A. Surlykke, P. Nachtigall, R.F. Fay & A.N. Popper, editors, *Biosonar*. Springer Handbook of Auditory Research, vol. 51, Springer: New York, 2014).

Her insect studies emphasized specializations in hearing for the detection and evasion of bat predators. She conducted detailed behavioral and physiological studies of the ears and auditory neurons of many different insect species. Annemarie's publications also include theoretical work that addresses the co-evolution of hearing in predators and prey.

Annemarie's scientific publications had a resounding impact on the field of neuroethology. For example, she discovered the extremely high sound levels of bat calls (PLOS One 3, 2008) and demonstrated that different species of bats, irrespective of size, have comparable emission sound volumes, i.e. acoustic field of view, most likely reflecting common optimization processes (Nature 493, 2013). Her work raised important questions about auditory processing and scene representation in bats.

Annemarie's research was internationally recognized, and she received support from the European Union, Human Frontiers Science Program, and the Natural Science division of the Danish Council for Independent Research (FNU), where she served as a highly esteemed council member for six years. She was a Fellow of the Institute of Advanced Study in Berlin in 2008 – 2009, and she received a major research award from the Danish Academic Society in 2013.

Annemarie was an outstanding lecturer. She engaged audiences through compelling narration of her investigations of intriguing animals, punctuated by passion for her research. The door to her office was always open and the way she balanced encouraging words and constructive criticism – often served with humorous input – earned her great respect and admiration from students and colleagues both. Her second great passion was horseback riding, and she would nourish her mind by riding in the forests near her beautiful home in Denmark, where she also found time to care for a vibrant garden of flowers and produce.



Annemarie Surlykke's extraordinary contributions to science and her community will continue to inspire those who knew her. The deepest condolences of the International Society for Neuroethology go out to her husband, Per Østergaard, son, Søren Surlykke, and all other family members, friends and colleagues.

NEUROETHOLOGY IN TUSCANY

ISN Treasurer and GRC Co-Chair **Karen Mesce** submitted the following account of the 2015 GRS and GRC. ISN member **Eric Warrant** served as Co-Chair of this successful meeting. Thanks to Karen for supplying the accompanying photos.



Renaissance Tuscany II Ciocco, Italy.

This past summer's Neuroethology Gordon Research Conference (GRC) and Seminar (GRS), by all accounts, was deemed to be a terrific and memorable event. Held in the Tuscany region of Italy, just outside the enchanting hillside town of Barga, participants enjoyed presentations of cutting-edge science, beautiful surrounds, cool jasmine-scented breezes on the terrace with friends old and new, and the clinking of glasses filled with great Italian wines. Between the morning and late afternoon scientific sessions, attendees had the opportunity to recharge by taking a swim in the conference site's pool, walking to Barga, or taking a tour to a local cheese-making factory, a vineyard and wine-tasting, and the beautiful historic town of Lucca, birthplace of the great operatic composer Puccini.



Conferees learn about cheesemaking.

The GRC and GRS Chairs worked over a two-year span to create thought-provoking and interdisciplinary scientific programs, and attendance was up by over 45% compared to previous meetings. Generous financial support was obtained from the **US National Science Foundation**, the **US National Institutes of Health**, the **US Air Force**, and the **Center for Insect Science, University of Arizona**. Thinking back to the meeting,

what was most memorable to many was the amount of networking that took place between junior scientists and their research heroes. Not only were bridges built spanning different generations of neuroethologists, but formally-trained engineers, computer scientists, chemists, physicists and mathematicians found a new welcome in the field of neuroethology. If you were unable to attend the 2015 GRC/GRS, please take a look at the Program. To all who helped make it happen – Grazie Mille!

<https://www.grc.org/programs.aspx?id=14578>



MIDWEST NEUROBIOLOGISTS: ORIGINS AND HISTORY

ISN member **Lon Wilkens** (University of Missouri-St. Louis) has shared a brief history of a successful example of a *self-organized* regional group of North American scientists dedicated to neurobiology and neuroethology. Many current members of the ISN (including current Secretary **Susan Fahrbach**, current Treasurer **Karen Mescé** and former Treasurer **Fred Delcomyn**) remember these meetings with great affection, as they provided scientifically stimulating venues at which colleagues became friends. Thanks to Lon for providing the photo of **A. Donald Murphy** and images of program covers from the extremely poorly documented pre-cell phone camera era.

The annual meeting of **Midwest Neurobiologists** began in 1978, but the idea of holding regional neurobiology meetings originated more than 10 years earlier in the form of meetings organized by neuroscientists on the U.S. west coast affiliated primarily with departments of biology and zoology. First perhaps was the **West Coast Conference on Excitable Systems**, originally designed to enhance communication between labs working primarily on invertebrates. This conference was organized by **C.A.G. Wiersma**, **Theodore Bullock**, and **Graham Hoyle**, and met in San Francisco at the St. Francis Hotel. A **West Coast Nerve Net**, eventually called **Western Nerve Net**, followed and rotated among campuses. Younger neuroethologists may be surprised to learn that these meetings preceded by several years the national meeting of the **Society for Neuroscience** (SfN), which met initially in 1971 in Washington, DC.

A successor regional meeting, **East Coast Nerve Net**, met for the first time in 1975 at the Marine Biological Laboratory in Woods Hole. The tradition continued with the **Midwest Neurobiologists** and, eventually, the **South East Nerve Net**, initiated in 1982 at the Whitney Marine Laboratory near St. Augustine, Florida. By comparison,

the **International Society for Neuroethology** is of relatively recent origin, first meeting in 1986 in Tokyo.

The script for each of the regional meetings was to provide a nearby venue and give preference to students, postdocs, and junior faculty as presenters to allow them to gain experience in a less formidable professional venue than a national meeting. The goal was to permit young scientists to receive feedback, share ideas, and network with established neuroscientists. Such was the format for the Midwest Neurobiologists over the



course of near-annual meetings, as summarized in the accompanying table. Indeed, **Don Murphy** (now Emeritus Professor in the Department of Biological Sciences, University of Illinois at Chicago) has recalled that his very first off-campus presentation, as for each of his students, was given at a Midwest Neurobiologists meeting. The accompanying photo of Don, who hosted no fewer than 4 meetings, was taken at the 1993 meeting. In addition to contributed presentations, notable keynote speakers and symposia were featured to highlight advances in the field.

The initial Midwest Neurobiologists meeting, held at Pere Marquette State Park, a rustic lodge north of St. Louis, also featured affordability, inflation notwithstanding! Registration fees were \$5 for faculty, \$3 for students, with rooms at \$15/day. Registration fees totaled \$678, which covered meeting facilities, lunch, coffee breaks, and travel expenses for the keynote speaker. Dinner preceding the keynote address was an additional \$6. A single sponsor was recruited for the meeting. In exchange for a program advertisement for cytochalasins, Dan Broida of the Sigma Chemical Company agreed to underwrite any deficits incurred by the organizing committee in what turned out to be cost-free advertising.

Midwest Neurobiologist meetings were held annually in March or April and hosted by stellar groups of neuroscientists representing institutions throughout the US Midwest. Participants represented all branches of neuroscience, but with a clear bias toward invertebrate systems and neuroethology. Lacking patent protection, organizers variously titled meetings as the No-Coast Nerve Net, Most-Coast Nerve Net, even “Da Best Coast” Nerve Net. A final meeting was held in 2009 in conjunction with the Milwaukee Chapter of the SfN. Attendance varied from 75 to 150. Poster sessions were soon incorporated in parallel with oral presentations. Lab

tours became popular activities early on, and abstracts were published in programs starting in 1981. The weekend meetings typically concluded with a Sunday morning breakfast symposium featuring 4 – 5 invited speakers.

Financial support eventually became necessary with meetings utilizing campus facilities and/or held in major cities. Generous support was provided by multiple academic units of the host institution and commercial suppliers exhibiting at the meeting. Costs included travel expenses and honoraria for invited speakers. Frequently, unspent funds were passed on as seed money to future organizers, along with a growing mailing list. Now that the meeting has seemingly run its course, held-over funds are being designated for support of student travel grants.

the Old State Capital in Springfield, Illinois, site of Abraham Lincoln's famous *A house divided against itself cannot stand...* address. Banquets included entertainment by professional musicians including a blues band, Dixieland jazz ensemble, bluegrass singer-songwriter Alison Krauss' back-up band, a string band, and a string quartet. There was sometimes dancing late into the night! Keynote speeches were a meeting highlight not only for their *brainy* content, but for pure entertainment value as well. Speakers and/or their introductions often featured personal anecdotes and stories involving colleagues with outsized personalities and the occasional *neurally-relevant* jest. The list of keynote speakers includes **Stephen Kuffler, Stan Kater, Nobuo Suga, Tom Carew, ISN Fellow John Hildebrand, John Edwards, ISN member Harold Zakon, Marc Breedlove, Antony Stretton, Ladd Prosser, Joshua Sanes, William Greenough**, and our current **ISN President, Peter Narins**. Despite a long history of 26 successful meetings, the Midwest Neurobiologists now seems to have run its course in concert with the growing emeritus status of a strong cohort of Midwest participants. *Thanks for the memories.*

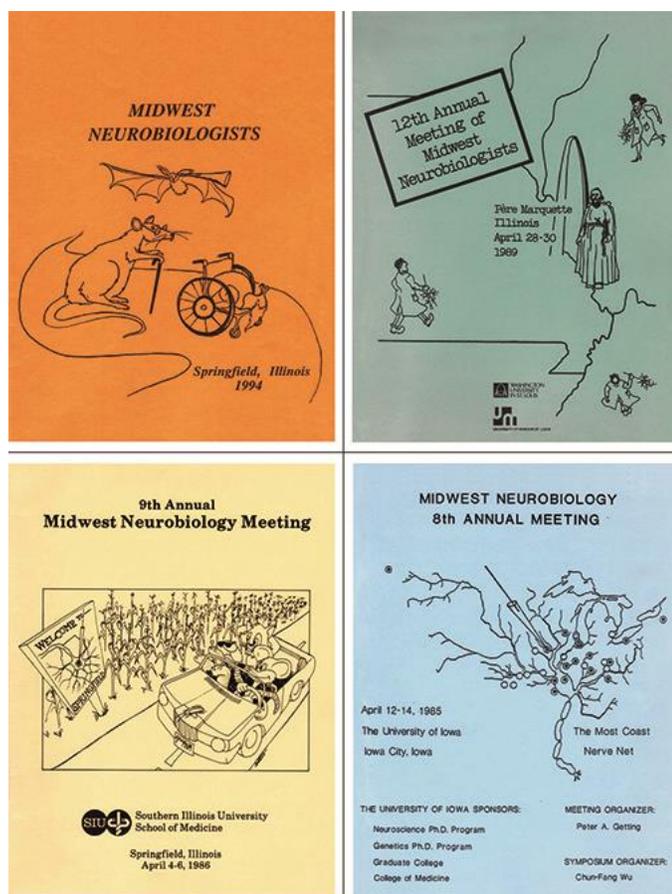


SCIENTIFIC PDA AND YOU: NOT EXACTLY A "PUBLIC DISPLAY OF AFFECTION"

ISN **Early Career Representative Kate Feller** of the University of Maryland has sent us the following dispatch from the frontiers of scientific publishing.

We modern neuroethologists, like other modern scientists, no longer keep our data in paper folders filed in metal filing cabinets or in three-ring binders stacked high above our desks – it's digital. Regardless of your field or discipline, with the click of a button files containing years of meticulously compiled results can be accessed, reviewed, analyzed, or shared from a personal computer or private cloud service. Given the ubiquity of digital data in our lives, it is easy to consider the benefits of storing these data (as they are published) in open-access repositories rather than on personal hard drives. Aside from ensuring data preservation, public data archiving (PDA) promotes collaboration, data transparency, reanalysis and reinterpretation of data, and an overall opportunity for the advancement of science.

Though many researchers are philosophically supportive of PDA and its benefits, some remain resistant to public archiving because of real or perceived costs that come with freely sharing one's hard earned data. Many of us also lack the training to implement PDA effectively. These issues are exacerbated by the top-down



The Midwest Neurobiologists meetings are memorable not only for the experience gained by students and junior scientists, and for the cutting-edge research presented by invited speakers, but for their venues and warm social environment. Pere Marquette State Park and the Allerton Park and Conference Center, University of Illinois, featured lovely natural settings while banquets and keynote addresses were also held in historic facilities, such as the Robert E. Lee stern wheeler docked on the St. Louis riverfront (since burned), and the Assembly Hall at

implementation of PDA policies on scientists by many journals and funding agencies. Research fields (such as neuroethology) are shifting towards accepting data archiving, but much slower than the rate at which PDA policies are being introduced elsewhere (for example, in molecular fields). It is not, therefore, surprising that many researchers may be cautious about what becomes of their most important product – their data!



Figure 1. Public data archiving (PDA) is finding its legs in fields outside of genetics and molecular biology. Navigating through this movement can be difficult as journals and funding agencies start enforcing PDA policies, but the benefits to your own research as well as the greater progress of science are well worth it. Illustration by Ainsley Seago.

But fear not, there are researchers who are actively working to bring clarity and resolution to PDA controversies. In an effort to get scientists involved in the conversation surrounding the policies that affect researchers, Dr. **Dominique Roche** (Université de Neuchâtel) and colleagues are trying to address scientists' concerns surrounding PDA and offer specific solutions to reconcile these issues. Their work outlines many of the benefits, problems, and solutions for increasing PDA participation in fields not presently accustomed to this practice. The most recent of these articles, which just came out in *PLOS Biology* in November 2015 (1), provides an in-depth scientific analysis of the current success of PDA policies in journals that enforce them – and the findings are shocking.

After examining 100 non-molecular articles published in journals with strong PDA policies in ecology and evolution, Roche and his colleagues found that over half of the associated datasets were incomplete (56%) or that the data were archived in a way that impeded data reuse by a third party (64%). Datasets were sampled across seven leading journals in ecology and evolution, which highlights the prevalence of noncompliance with journal PDA policies. In an interview, Dr. Roche explained: *To promote transparency, journals require scientists to make their data public. Unfortunately, this can create conflict, and people sometimes archive unusable data. Clearly, we need to address the concerns of scientists and reconcile*

these conflicts so we can move forward with PDA in the most effective manner.

Roche and his colleagues go on to suggest possible solutions, including rewarding academics for good data archiving practices. Roche states: *We [scientists] need to be rewarded when we chose to work collaboratively! Funding agencies should recognize the huge contributions of people who open up and share their precious data.*

If you want to learn more about other solutions for improving the culture around PDA practices, check out the recent paper by Roche et al. in *PLOS Biology* (1). The data for this publication are publicly available on the data repository figshare and provide good examples of clear and complete data archiving. Additional suggestions from Roche and colleagues for improving participation in PDA can be found in a previous *PLOS Biology* article from 2014 (2).

In the meantime, you may be wondering how data archiving affects YOU and YOUR SCIENCE. As Roche pointed out, archiving is good because it encourages you to be a better data manager yourself: *Something as simple as including clear data descriptors in anticipation of archiving will prevent your own [unpublished] data from becoming obsolete down the road.* Data archiving is fairly simple and only gets easier the more you do it. If you are looking for helpful guidelines to develop good PDA practices, Michael Whitlock's 2011 *Trends in Ecology and Evolution* paper provides excellent advice (3). You will also, if you have not already, encounter more journals and funding agencies that require PDA. Public data repositories are third parties to journals and funding agencies, so it can be a challenge to find the right repository for your data. A good place to start looking is a field-specific list of data repositories, such as <http://www.nature.com/sdata/data-policies/repositories>.

The nuances of data archiving policies may change as the discussion around their efficacy continues, but they will not go away. Now is the time to start learning the best practices for archiving your data. If we have to perform PDA, it is in the best interest of science for you to do it well.

Want to learn more? **Kate Feller** has provided the following list of citations to get you started.

(1) Roche, DG, Kruuk LEB, Lanfear R, Binning SA (2015) Public Data Archiving in Ecology and Evolution: How well are we doing? *PLOS Biology*. November 2015.

(2) Roche DG, Lanfear R, Binning SA, Haff TM, Schwanz LE, Cain KE, Kokko H, Jennions, MD, Kruuk LEB (2014) Troubleshooting public data archiving: suggestions to increase participation. PLOS Biology. DOI:10.1371/journal.pbio.1001779

(3) Whitlock MC (2011) Data archiving in ecology and evolution: best practices. Trends in Ecology and Evolution. doi:10.1016/j.tree.2010.11.006



ASK GABBY

Our popular advice column is back! ISN **Early Career Representative Gabriella Wolff** responds to your pressing questions! Note that you can send your questions to Gabriella at her new address: gabwolff@uw.edu, where she is now a member of the laboratory of **Jeff Riffell** in the Department of Biology at the University of Washington in Seattle.

Dear Gabby,

I'm just starting my career in neuroethology, but I'm not sure if I will continue in academia or pursue a different career. What other options are out there? Will my training in a university lab even be applicable in another line of work?

*Signed,
Pluripotent Neuroethologist*

Dear Pluripotent,

Many young neuroethologists are preparing for a career path that will lead to a professorship, while others find that their paths lead in alternative, but fulfilling directions. However, students and post-doctorate researchers are not always exposed to information about non-academic jobs or how to get started. To be honest, when colleagues enter into industry, I often lose touch and may not get to hear about their experiences on the “other side”. To find out what PhDs are doing with their neuroethology training outside of academia, I interviewed several scientists representing the fields of pharmaceuticals, publishing, and government research.

Gabriella Wolff (GW): What motivated you to seek employment outside of academia?

Jason Miranda (JM), Principal Scientist, Neuroscience and Pain, Pfizer Ltd.: I got into industry work because I was offered the opportunity to learn a technique I was always interested in, awake-behaving electrophysiology and to learn from a scientist that helped develop the technique.

Teresa Esch (TE), Features Editor, Journal of Neuroscience: I always wanted to spend most of my time writing. In fact, I decided to go to graduate school not only because I was fascinated by neuroscience, but also because professors complained that they spent all of their time writing instead of doing experiments. That sounded great to me! I never enjoyed the day-to-day grind of working in the lab, however, and I didn't want to spend my life focused on one small area of neuroscience. Therefore, I decided to get a job focused on writing and editing, and The Journal of Neuroscience is the ideal place for me to do that.

Jennifer Talley (JT), Air Force Research Laboratory, Biological Research Scientist: Lifestyle! Academia offers flexibility, which can be very valuable in terms of family decisions etc. However, this is at the expense of having structured work hours and designated vacation time. When my official work day ends I often choose to leave the office and stop working. I also often spend the entire weekend NOT working but instead pursuing my interests outside of the office. Every year I take vacation time and I am not expected to do any work during my vacation. This may come as a shock to graduate students, but I can do this and still receive positive evaluations, and in fact my supervisor discourages working during off-duty hours.



Jennifer Talley proves that she has a life outside of the lab in a photo provided by **Gabriella Wolff**.

GW: Tell me about your typical responsibilities and how your experience in research prepared you for this career?

JM: I use my training in sensory neuroethology to push for strong hypothesis driven experimental design. I also push to use stimuli that make sense in light of the evolutionary life histories of the animals we study and make sure our interpretations do the same. I'm finding that these concepts are well received but that there is still much work to be done.

TE: I write This Week in the Journal every week in The Journal of Neuroscience, and I review and edit Journal Club articles. The first currently involves reading and writing brief summaries of two articles published in each week's issue of the journal, and the second involves reading students' and post docs' discussions of journal articles, judging their quality, and editing them to improve clarity and flow. Together, these jobs require me to read about all areas of neuroscience, from protein structure to neuroeconomics. My research experience wasn't as broad as that, but it did cover a fairly broad range (cellular and developmental neuroscience in graduate school and behavior and physiology as a post-doc), and that gave me a broad knowledge base to build on. In addition, my graduate advisor emphasized the importance of good writing. Before I submitted the main paper from my graduate work, I sat with him and two post docs from the lab and went through the paper sentence by sentence to improve clarity and overall structure. That was invaluable in teaching me how to write about science.

JT: I have research, program management, and administrative/community commitments very similar to the academic world. The main difference is the details of the “busy work” and that I must emphasize transition of basic research to application.

GW: Jennifer, do you feel the same pressures of funding that scientists are experiencing in academia?

JT: Probably not as extreme, my salary is almost guaranteed as long as the government does not shut down. If I want to work on my own interests, I have to “sell” the idea to my leadership and then get funding for it from other government agencies.

GW: What advice do you have for young neuroethologists interested in following in your career footsteps? Where can they go for information?

JM: Most general neuroscience conferences (or specialist conferences if you have a specific interest) will have people from various companies presenting posters and talks and is a good way to meet people. I'd check the abstracts first to make sure that is true for a given conference. I found my job on sciencecareers.org and they often have advice blogs for this sort of thing. Also, many university professors have collaborations with pharmaceutical/biotech companies so finding them and seeking an introduction that way might work. University technology transfer offices also have broad connections so they might be able to help.

TE: One thing people who want to be an editor at a scientific journal should know is that most journals want

editors who have post-doctoral experience. I recommend doing something a little different than what you did in graduate school to broaden your experience. For people who primarily want to write, I recommend writing for the research magazines and newsletters that your university likely has. In addition, read articles by the professors you know and identify one who seems to write in an especially clear and engaging style. Ask that person to provide guidance when you write your own papers. Technical writing is different and needs to be more structured than the things that most people write before they go to graduate school, and even good writers need to be trained to write well for scientists. You should also consider writing a Journal Club article for The Journal of Neuroscience or some other journal.

When you are ready to look for a job, don't ignore corporations. I worked writing product manuals and brochures for a scientific instrument company for several years before starting to work for The Journal of Neuroscience. It was more enjoyable than I ever thought it would be, and it gave me experience writing, copyediting, following a style guide, meeting deadlines etc. All the skills that any publishing company looks for!

Finally, for anyone looking for a career outside academia, consider working with a job placement agency. I happened to work with one when I got my first job only because they were the ones that put out the advertisement. But the agent I worked with acted as a cheerleader and advisor when I was preparing for interviews, and I think that helped boost my confidence and helped me to present myself in the best light.

JT: NRC [National Research Council] post docs are wonderful introductions to government labs with good pay. Networking is key, you should exploit your connections and their connections because it does matter who you know.

Thanks to Jason, Teresa, and Jennifer for a fascinating view into the world off-campus! Regardless of which career path each of us chooses, remember to stay in touch with members of other fields because we can only benefit from a healthy flow of information between Academia and Industry.

Sincerely,

Gabriella Wolff “Gabby”



FOCUS ON EARLY CAREER INVESTIGATORS

Recent recipients of the **Heiligenberg Travel Award** and the **Konishi Neuroethology Research Award** have shared information on how they used (or will use) their awards. Compiled by ISN Secretary **Susan Fahrbach**. **Anthony Auletta**, **Karen Mesce**, and **Michael Yartsev** contributed the accompanying photos.

Anthony Auletta (doctoral student, University of Minnesota) received a **Heiligenberg Travel Award** in 2015. He writes: I am very pleased and grateful to have received financial support from the International Society for Neuroethology via the Heiligenberg Travel Award. This award, as well as other funding sources from my lab and department, allowed me to attend the 2015 Gordon Research Conference in Neuroethology this summer in beautiful Barga, Italy. It was an invaluable experience for me, as it was the first major neuroethology conference that I attended, and the first conference at which I presented the preliminary results of my doctoral research. It was great to meet so many enthusiastic scientists who are doing some truly interesting and inspiring work, including some of the famous names that I recognized from the literature. The breadth of topics represented at the meeting was incredible; one of the reasons that I love neuroethology is the fact that scientists in our field study such an incredibly diverse set of organisms and research questions. The Gordon Research Seminar that preceded the conference was especially useful for me; it was a fantastic opportunity to meet and network with other graduate students and early career professionals in the field, and I look forward to continuing to discuss ideas and collaborate with some of these amazing young scientists in the future.



I am currently a graduate student in the lab of ISN member **Karen Mesce** at Minnesota, where I am pursuing a PhD in entomology (with a neuroscience minor). I have a broad background in neuroscience, ethology, and organismal biology (especially entomology and arachnology). The goal of my research is to better understand how "small brains do big things;" i.e. how organisms with numerically simple nervous systems can exhibit varied and sophisticated behavioral repertoires. To this end, I am currently examining the role of dopamine – a universally important modulator of behavior – in the central nervous system of spiders. Relatively little is known about the functional aspects of the spider central nervous system, and thus my research addresses open questions in the

fields of both neuroethology and arachnology. My research incorporates elements of neuroanatomy, physiology, development, behavior, and evolutionary biology.

Olga Dyakova (doctoral student, Uppsala University) also received a **Heiligenberg Travel Award** to attend the 2015 Gordon Research Conference. She writes: On a hot, sunny day at the end of June 2015 I found myself in northern Toscana, Italy, thanks to the Heiligenberg Travel Award. The wonderful view of the Apuan Alps was delightfully mingled with the intriguing world of neuroethology.



After a warm welcome from Conference Co-Chairs ISN members **Karen Mesce** and **Eric Warrant**, the Gordon Research Conference (GRC) immersed me into a fascinating atmosphere of sharing the neuroscience underlying naturalistic animal behavior. I was amazed by the willingness of people to exchange their personal experiences in these endeavors. Five days of lectures, poster sessions, and informal talks provided not only an enormous wealth of knowledge, but also gave me an opportunity to meet wonderful people and experts. Thanks to my brilliant supervisor, ISN member **Karin Nordström**, I have developed an intense and passionate interest in hoverflies, the marvelous creatures capable of performing incredibly fast actions in very cluttered environments. At the GRC I presented a poster where our results show a link between image statistics and visual responses in hoverflies. It was a great pleasure to discuss our work with ISN members **Mark Frye**, **Emily Baird**, **Paloma Gonzalez Bellido**, and many other excellent scientists.

The GRC was preceded by the Neuroethology Gordon Research Seminar (GRS), which was designed especially for young neuroethologists. I found this provided an excellent opportunity for graduate students and post docs to share data and their experiences with each other.

In summary, the **Heiligenberg Travel Award** gave me the opportunity to have a wonderful time of gaining knowledge, have fruitful discussions, and gain new contacts at the GRC and GRS.

2015 **Konishi Neuroethology Research Award** winner **Michael Yartsev** (also the 2012 **Capranica awardee**) is Assistant Professor of Neurobiology and Engineering in the Department of Bioengineering and the Helen Wills Neuroscience Institute at UC-Berkeley. He will use his

award to further his studies of the neural basis of complex spatial and acoustic behaviors in mammals.



The Yartsev lab is focused on one of the most acoustically and spatially sophisticated mammals on our planet – the bat. Dr. Yartsev writes: For the study of spatial navigation, we build on a long history of behavioral investigations in flying bats, which provide a detailed behavioral description of the

bat navigational strategies. We combine this with our development of wireless methods for studying neural circuits from the brains of freely flying bats. This allows us to use the bat’s remarkable natural behaviors for our investigations. Additionally, we utilize the fact that when bats fly in darkness, the only sensory channel that is used by the bat is that of echolocation and we, the experimentalists, can monitor that channel very easily. This, in turn, provides exceptional resolution into both the incoming sensory information that shapes the bat’s spatial decisions as well as its internal behavioral state. Combining these, we study the complex spatial behavior of bats and its underlying neural mechanisms.

We are also very interested in the neural basis of social acoustic communication in mammals. We use bats because they are vocal experts and through vocal learning acquire a very rich and diverse acoustic repertoire. This presents a unique opportunity to study the neural basis of acoustic communication from an ethological perspective. These advantages allow tackling novel questions, such the influence of social dynamics on the neural mechanisms of communication and the neural mechanisms of language development.



In all of our studies, we emphasize technological development and application of novel techniques to the bats. These include imaging and genetic methods that are now becoming available for non-standard model systems.

In summary, our lab is embarked on an exciting journey where we plan to use the bat as a powerful model system for investigating the neural mechanisms underlying natural spatial behavior and acoustic communication.



GET READY FOR MONTEVIDEO ICN2016 WHILE MONTEVIDEO GETS READY FOR YOU!

The Local Organizing committee of ICN 2016 has sent the following information about the upcoming congress. ISN Member **Ana Silva** provided the accompanying photos.

The **ICN2016** will be held in Montevideo, Uruguay. The Program Committee, chaired by ISN members **Martín Giurfa** and **José Luis Peña**, has organized an exciting and cutting-edge program that will make this ICN most memorable! The worldwide diversity of neuroethological approaches is represented by outstanding scientists participating in plenary plenary lectures, invited symposia and the **Presidential Symposium**, which is a new feature of the **ICN2016**. Prior to the **ICN2016**, six **Satellite Meetings** focusing on the latest insights of relevant model systems and topics will be held in emblematic city sites. Program, travel, and housing information can be found in the **ICN2016** website (www.icn2016.uy), which we recommend browsing carefully, as there are multiple activities that might interest you. Registrations are now open. We encourage all to register at your earliest convenience to get the best rates.



Montevideo, which is Uruguay's capital, has a population of 1.5 million. The city sprawls along the banks of the

Plata River, with sandy beaches and an atmosphere that blends European and South American flavors. As the International Society for Neuroethology is visiting South America for the first time, the Local Organizing Committee of the **ICN2016** is thrilled to make this ICN edition a very special event.

Getting Started

Beginning on March 20, 2016, the very first activity will be the **III Latin American School of Neuroethology**, an Argentina-Uruguay binational initiative. Sixteen trainees (graduate students or post docs) from Latin America will be accepted for this school, which will be implemented in two modules: The first module, will take place in Buenos Aires (Argentina), offering foreign and local faculty lectures as well as hands-on training. The second module will take place in Montevideo (Uruguay) and include participation in the **ICN2016**, its satellite activities and a field trip. Latin American students are welcome to apply following the instructions posted in the School website (http://www.icn2016.uy/latinamerican_school.html). Travel and housing, as well as registration fees to the **ICN2016** will be provided for the 16 students selected.

The opening of the **ICN2016** will be devoted to providing a warm welcome to the international neuroethology community and revisiting the history of our field in South America. The bountiful work of pioneer scientists from around the world, who fostered groups and developed novel experimental models, will be acknowledged during the **Opening Session of the ICN2016**. During the morning and afternoon preceding the **ICN2016** opening session, all participants are welcome to join the **II Meeting of Neuroethology of the Southern Cone**. This event will take place at the same venue, gathering active junior researchers from Argentina, Brazil, Chile and Uruguay, whose research carries on and expands the rich tradition of South American Neuroethology.



Neuroethology in Nature and Art

The Local Organizing Committee of the **ICN2016** is working hard to integrate attendees to the cultural and

social life of Montevideo city. Several activities have been planned: **Mario Penna**, a Chilean neuroethologist and member of the Local Organizing Committee of the **ICN2016**, will conduct a tango performance after the **Opening Session of the ICN2016**. To highlight the link between neuroscience and artistic creativity that captures public imagination, we have organized a **Photography Exhibition** inspired in Neuroscience and Animal Behavior, to be held at the City Hall. All ISN members, as well as the general public, are welcome to contribute to this exhibition, following instructions posted on the website (http://www.icn2016.uy/photo_contest.html). In addition, the local art group **ColectivoNegros** has been commissioned to design an installation that will be exhibited at the **ICN2016** venue. In their own words: we want to take a closer look to the world of neuroethology through uncomplicated art. Finally, to satisfy the love for wildlife and natural animal behaviors shared among neuroethologists, we have also planned opportunities for insight into the beauty and biodiversity of the South American fauna. Short bird-watching city tours as well as longer field trips are being specially organized for participants. Reservations for these activities can already be made through the **ICN2016** website.

We are very much looking forward to seeing all of you in Montevideo! The 2016 Congress will be held in Montevideo, Uruguay, March 29 through April 3, 2016, at the Radisson Montevideo Victoria Plaza Hotel.



SPECIAL DEADLINES FOR 2016

Heiligenberg Travel Awards: Because the international congress in Montevideo, Uruguay, will be held prior to the usual April 30 deadline, there is a **special deadline** for applications for ICN 2016. **This special deadline is January 11, 2016.** Decisions will be announced by February 11, 2016.

Konishi Neuroethology Research Awards: Please note that the deadline for 2016 falls earlier than usual because the International Congress will occur relatively early in the year. For the 2016 awards (to be announced at the ICN 2016), **the deadline is January 11, 2016.**

The **Capranica Award**, the **Developing Neuroethology Award**, and **Young Investigator Award** all also have **January 11, 2016** deadlines. Details on the ISN website.