



15th INTERNATIONAL CONGRESS OF NEUROETHOLOGY

28.07. – 02.08.2024
BERLIN _ GERMANY



CONFERENCE
PROGRAM



LOGO: Juliane Zimmermann

DESIGN: BESL Eventagentur GmbH & Co.KG

CONTENTS

Sponsors.....	4
ICN2024 Organizing Committees	5
Welcome Messages.....	6
Code of Conduct	10
General Information	11
Conference Map.....	12
Venue Maps & Accessibility.....	14

PROGRAM

Conference Schedule.....	16
Sunday, July 28.....	18
Monday, July 29	19
Tuesday, July 30.....	21
Wednesday, July 31	29
Thursday, August 1.....	34
Friday, August 2.....	40
Poster Session I.....	48
Poster Session II	64
Exhibitors.....	80
Was this it – are we done?	81
Become a Member	82

SPONSORS



Einstein Center
for Neurosciences Berlin



ICN2024 ORGANIZING COMMITTEES

Local Organizing Committee

<i>Mathias F. Wernet (Chair)</i>	Freie Universität Berlin
<i>Rüdiger Krahe (co-chair)</i>	Humboldt Universität zu Berlin
<i>Constance Scharff (co-chair)</i>	Freie Universität Berlin
<i>Ursula Koch</i>	Freie Universität Berlin
<i>James Poulet</i>	MDC Molecular Medicine, Berlin Buch
<i>Gary Lewin</i>	MDC Molecular Medicine, Berlin Buch
<i>Mirjam Knörnschild</i>	Museum für Naturkunde Berlin
<i>Benjamin Judkewitz</i>	Charité Medical Center, Berlin
<i>Daniela Vallentin</i>	MPI Ornithology/Biological Intelligence, Seewiesen
<i>Lauren Sumner-Rooney</i>	Museum für Naturkunde Berlin
<i>Silke Sachse</i>	Max Planck Institute for Chemical Ecology, Jena

Program Committee

<i>Coen P. H. Elemans (co-chair)</i>	University of Southern Denmark, Denmark
<i>Elke Buschbeck (co-chair)</i>	University of Cincinnati, USA
<i>Uwe Homberg</i>	Philipps-Universität Marburg, Germany
<i>Amir Ayali</i>	Tel Aviv University, Israel
<i>Laura Quintana</i>	Instituto de Investigaciones Biológicas Clemente Estable - MEC, Uruguay
<i>Constance Scharff</i>	Freie Universität Berlin, Germany
<i>Sakiko Shiga</i>	Osaka University, Japan

Social Media Team

<i>Manal Shakeel</i>	National Science for Biological Sciences, India
<i>Jerome Beetz</i>	Universität Würzburg, Germany
<i>Manon Jeschke</i>	Universität Bielefeld, Germany
<i>Olga Dyakova</i>	Universität Autònoma de Barcelona, Spain
<i>Pauline Fleischmann</i>	Universität Oldenburg, Germany

Early-Career Representatives

<i>Saumya Gupta</i>	University of Washington, USA
<i>Claire Rusch</i>	Champalimaud Centre for the Unknown, Portugal

WELCOME MESSAGES

Welcome from the President of the International Society for Neuroethology

I heartily welcome you to the 15th International Congress for Neuroethology (ICN)! Here, in the vibrant city of Berlin, Germany, we neuroethologists have the grand opportunity to celebrate the science we love, uniting us as an international society. Nearly 35 years ago, the 2nd ICN was also held in Berlin, and it was there that I first met dear colleagues who would become future mentors, collaborators, and life-long friends. There is, indeed, something very special about our scientific meetings above all others – if this is your first Congress, you will surely find your scientific home!

As the outgoing President, I am gratified to see that the ISN is healthy and growing, with many younger investigators embracing the field. In fact, this year's ICN has reached an all-time record of over 830 registered delegates and 633 abstract submissions. The 2024 ICN clearly promises to be a stellar event on so many levels, starting with a social reception on Sunday evening and ending Friday with our 'all-are-welcome' business meeting and banquet dinner. Some of the scientific highlights include Monday morning's Presidential Symposium, featuring 6 outstanding speakers who will present their cutting-edge research in the areas of motor systems, neuromodulation and the importance of behavioral context, reflecting some of my favorite topics. On Tuesday late afternoon, we will showcase our most talented younger investigators and their exciting research (the Young Investigator Symposium); a testament to the fact that the future of our field is in good hands. Nine outstanding plenary speakers, 13 invited symposia, 11 participant symposia, and 2 poster sessions



are sure to keep you well informed about the many neural solutions that nature has provided to keep your favorite animals behaving at their best! Lunch-time events are also planned to help with career skills, work-life balance and important issues regarding diversity and inclusion.

Our biennial Congresses take years in their making, and require many hours of hard work from dedicated volunteers who come together to ensure that we can share our passion for the discipline we embrace. Much of the heavy lifting falls upon our ICN Program Committee (Chaired by Elke Buschbeck and Coen Elemans) and Berlin Local Organizing Committee (Chaired by Mathias Wernet). Aside from continuous planning, across various time zones, these resourceful individuals submit proposals for grant support so that we can provide financial assistance to our members, mostly younger investigators, to attend the ICN. Together with funding from the ISN, we strive to fund as many members as possible. At the business meeting, it is always heartwarming to showcase all those who have received awards and prizes, and honor the newly inducted ISN Fellows. So, please attend the business meeting where we will also preview our 2026 ICN in Vancouver, Canada, gain a glimpse of the potential ICN venues for 2028, and usher in the new President, Cindy Moss. On behalf of the Executive Committee and Council of the ISN, I wish you a productive, memorable, and absolutely delightful 15th ICN. I hope that you will become inspired, ignite a new collaboration, make a new friend, strengthen bonds with old friends, and explore the electric city of Berlin!

Your President,



International Society for
Neuroethology



KAREN A. MESCE

Welcome from the Local Organizing Committee

We are very happy to welcome all of you to our beautiful city of Berlin!

Over the next 6 days, we hope that you will enjoy and discover exciting science, meet old and new friends and collaborators, as well as enjoy the German capital and all of its culinary and cultural opportunities.

Organizing this conference has been an exciting journey which led us along a completely new, unpredictable path with many unexpected turns, obstacles, and even some dead ends. We would not have been able to navigate this path without the help and close cooperation with the ISN leadership (president Karen Mesce, treasurer Susan Fahrbach, and secretary Gabby Wolf, and many more) and the Program committee (chaired by Elke Buschbeck and Coen Elemans who did an excellent job), the advice of previous LOC chairs (Rui Oliveira, Justin Marshall), the support by the administration of the Freie Universität Berlin (central purchasing, tax, legal, and data protection officers), as well as the close interaction with the event organization company BESL (in particular, project manager Axel Wendt), which saved our lives on several occasions.

Please do not hesitate to approach us with any questions and suggestions during the conference. Our student helpers, called 'Neurohelpers', will be wearing bright red T-shirts. Please let them know if there is anything you need. The ICN2024 contact e-mail will also remain in operation: info@icn2024-berlin.org (thank you very much to Chrissi Karasev for having responded to hundreds of e-mails already). We did our very best to organize a smooth, professional conference. The sheer size of this year's ICN has been both a blessing and a challenge – we hope that you will enjoy the scientific and personal exchanges and overlook any glitches that might happen along the way.

We are particularly grateful to several people and institutions who helped us support a number of neuroethologists from the Global South, making their attendance possible (the Freie Universität Berlin, the Boehringer Ingelheim Foundation, and several generous colleagues whose unselfish acts will not be forgotten). Our aim is to make this conference an open forum that is welcoming to everybody and we therefore ask you to take another careful look at the code of conduct that we all agreed on upon registration. This may be the largest gathering of neuroethologists ever – we hope that you feel right at home at the ICN2024!

On behalf of the entire Local Organizing Committee,



MATHIAS F. WERNET



CONSTANCE SCHARFF



RÜDIGER KRAHE

Welcome from the Program Committee

We are very excited to welcome all of you to the ICN in Berlin!

As program co-chairs, together with the help of our other members of the Scientific Program Committee, we have worked hard to make an exciting and memorable program with diversity at all levels. The program includes over 100 oral presentations including founder talks by Mackenzie Mathis and Gilles Laurent, 6 presidential talks, 4 young investigator award winners and 9 amazing plenaries. Furthermore, the program boasts 11 participant symposia and 13 invited symposia that will cover topics ranging from biological clocks to navigation and mental time travel, from color vision to neural responses to anthropogenic changes. In short, we proudly present a huge range of exciting talks that once again highlight the high scientific level, technological innovation and diversity in our field.

Having sufficient time for collegial discussion after a talk really sets the tone to a meeting. Therefore, we scheduled sessions with time for discussion. This is particularly important to us, as it will give our many trainees ample opportunity to ask questions.

To support our participants from all over the world we also have been busy to seek funding from many different sources, including from the National Science Foundation, the Kavli Foundation, the Office of Naval Research and the US Air Force. Please check out our funding acknowledgement page for details on the many other funders who contributed. We are happy to announce we were able to raise over 120,000 Euro to support this meeting, primarily focused on supporting the next generation of Neuroethologists.

We hope that the meeting will inspire your research and your teaching. That you will be blown away by new insights. And of course that you will strengthen established and start new collaborations to push the boundaries of the science that drives us all.

On behalf of the Scientific Program Committee,



ELKE BUSCHBECK



COEN P. H. ELEMANS

CODE OF CONDUCT

Through our biannual congresses, the International Society for Neuroethology (ISN) fosters open exchange and critical evaluation of scientific ideas, facilitates development of new collaborations, and enables participants to find employment or recruit people to fill positions. To these ends, the ISN wants its meetings to be inclusive and for participants to feel safe and welcome.

All participants at the International Congress of Neuroethology (ICN) should behave professionally, treating each other with respect and consideration. This includes thoughtful appreciation of each one's own professional status and position and an attempt to understand the status and position of others who may not share the same background or privilege. An open, inclusive environment is one where all participants emphasize supportive and empathetic behaviors. Participants must recognize that power and status affect how others receive words and actions and how others express themselves (or feel limited in their expression). It is not easy to flawlessly respect boundaries that may appear hidden or to understand how different backgrounds affect the perception of shared experiences, but respect and empathy for all should be the over-riding principle.

The following behaviors are strictly prohibited whether the behavior is expressed physically, verbally, or in writing.

Sexual harassment of any participant, including scientific attendees and their guests, vendors, support staff, service providers, and volunteers. Harassment includes but is not limited to unwelcome conduct of a sexual nature, including advances or propositions, requests for sexual favors, sexually explicit jokes, unnecessary touching, catcalling, and other conduct of a sexual nature. Participants must recognize that behavior that is acceptable to some people may not be acceptable to all, and that people in junior positions or from less privileged background may be reluctant to explicitly object to unwelcome behavior.

Discrimination of any kind, including but not limited to discrimination on the basis of race, ethnicity, culture, national origin, sexual orientation, gender identity and expression, social and economic class, educational level, immigration status, age, ability, marital or family status, political belief, or religion. Be aware that jokes or attempts to make light of status differences or physical appearance generally reinforce, rather than diminish, power differences. Words or actions that manipulate status or power to belittle, offend, or otherwise disenfranchise meeting attendees are unacceptable, as are inappropriate comments made in a joking manner.

Bullying, intimidation, and physical harm of any participant through behavior that frightens, threatens, or humiliates the recipient, including disruption of presentations as well as stalking or following. We recognize that scientific disagreements will sometimes arise and we in no way want to stifle scholarly and scientific discussion, but these discussions should be fair and respectful, focusing on the science rather than the individuals discussing it.

Retaliation for reporting inappropriate behavior, as well as bad faith reports of inappropriate behavior, are unacceptable and will be considered a violation of the code of conduct. Reports of violations of the code of conduct will be treated with strict confidentiality. Those experiencing or witnessing violations of the code of conduct can report them in person to any ISN officer or member of the ISN Inclusion and Diversity Committee (easily identifiable by their pink conference name tags) or in writing by sending an email to any ISN officer or member of the ISN Inclusion and Diversity Committee (whose email addresses are posted in the ICN website, www.neuroethology.org). If further anonymity

is desired, reports can be sent from a newly-created, free Gmail account. All reports of misconduct will be investigated thoroughly, fairly, and as quickly as possible by the Inclusion and Diversity Committee, who will provide all parties with a chance to explain themselves and will treat such matters with strict confidentiality. ICN organizers and ISN officers reserve the right to enforce this code of conduct in any manner deemed appropriate. Anyone violating the code of conduct will be asked to stop engaging in inappropriate behavior and may be prohibited from presenting, expelled from the meeting without refund, prohibited from attending future meetings, and/or have their membership revoked. Actions that violate local laws may be reported to local law enforcement.

GENERAL INFORMATION

DUPLICATION AND RECORDING

Unauthorized photography, audio taping, video recording, digital taping or any other form of duplication is prohibited in the congress sessions.

INTERNET

Wireless internet (Wi-Fi) will be available free of charge for delegates at the main venue. You can either use the eduroam network or the conference network, called "conference". For the latter, open an arbitrary web page. Instead of that page a form will appear, in which you enter the password which we will display prominently at the venue. You will then be automatically forwarded to the web page you opened initially. For technical reasons the connection to the wireless network may be interrupted at midnight. In that case you have to re-enter the password the next day.

NAME BADGES

For security reasons, delegates, speakers and exhibitors are required to wear their name badge to all sessions and social events. Entrance into sessions is restricted to registered delegates only.

SPEAKERS

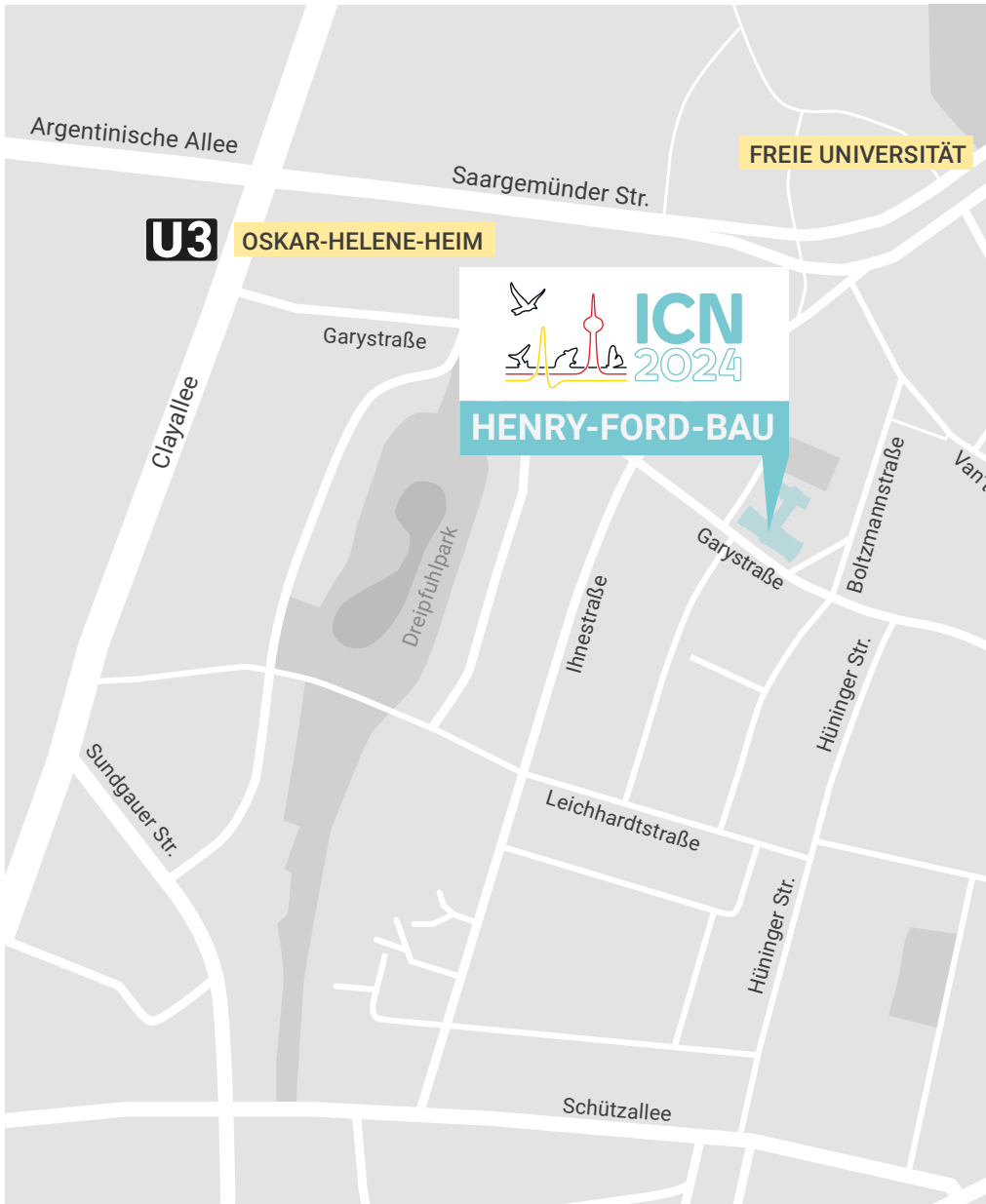
Speakers will have to use the PCs available at the venue and will not be able to use their own laptops. Please upload your presentation to the presentation server at the Slide Desk in time for your presentation. For Monday morning talks, upload either Sunday between 6 – 8 pm or Monday 7:30 – 8:45.

For all other talks, the Slide Desk is available daily, Monday – Friday between 12:30 to 2:30 pm ONLY. Thus, speakers in morning sessions need to upload their talks the day before their talk. The presentation slide size should be set to widescreen (16:9) aspect ratio and saved as pdf or pptx file. File names should follow this format: Monday_PM_ParticipantSymposium1_SmithAndy.pdf). If you plan to present videos, please embed the videos into your presentation AND also upload them on the presentation server at the Slide Desk. Mac users should verify that their presentation is shown correctly on the PC system. Please arrive at your presentation room at least 15 minutes before the start of the session.

CHILD CARE

There is no formal, commercial child care arrangement due to the very few requests, but there is a centrally located room available at the venue for self-organized adult-supervised child care.

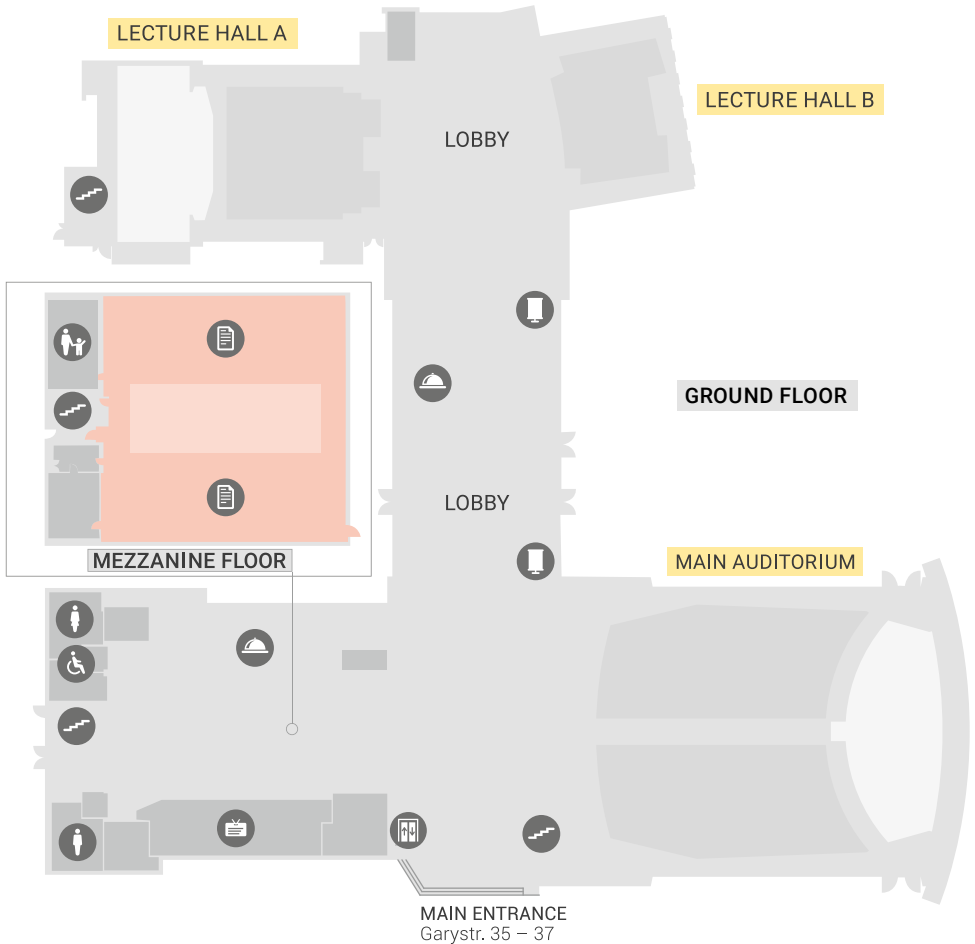
CONFERENCE MAP





VENUE MAPS & ACCESSIBILITY

Henry-Ford-Bau, Garystr. 35 – 37, 14195 Berlin



LEGEND



Exhibition Area



Poster Session



Registration



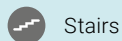
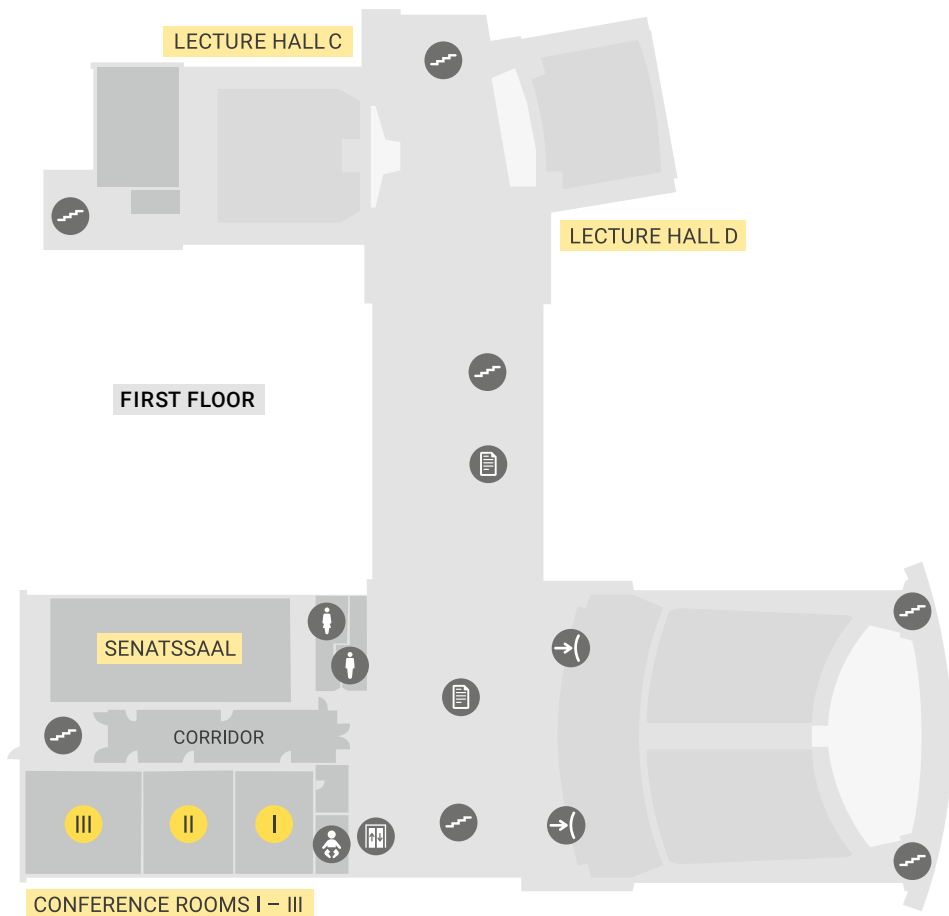
WC



Lift



Parent-Child-Room



Stairs



Entrance to Gallery



Slide Desk



Catering



Nursing Room

CONFERENCE SCHEDULE

TIME	SUNDAY, JULY 28	MONDAY, JULY 29	TUESDAY, JULY 30
from 08:00		Registration	Registration
09:00–09:30		Presidential Symposium	Plenary 2 Oliveira
09:30–10:00			Coffee Break
10:00–10:30		Coffee Break	Invited Symposia 1–4
10:30–11:00		Presidential Symposium	
11:00–11:30		Lunch 12:45 Career Planning Sessions	Lunch 12:45 Inclusion & Diversity Session
11:30–12:00			
12:00–12:30		Plenary 1 Bauer Mikulovic	Plenary 3 Yazaki-Sugiyama
12:30–13:00			
13:00–13:30		Poster Session I	Participant Symposia 1–4
13:30–14:00			
14:00–14:30	Registration	Coffee Hour	Coffee Break
14:30–15:00		Poster Session I	
15:00–15:30	Reception & Opening Ceremony	Huber Lecture Laurent	Young Investigator Symposium
15:30–16:00			
16:00–16:30		Student/Postdoc Icebreaker	
16:30–17:00			
17:00–17:30			
17:30–18:00			
18:00–18:30			
18:30–19:00			
19:00–19:30			
19:30–20:00			
20:00–20:30			
20:30–21:00			

WEDNESDAY, JULY 31	THURSDAY, AUGUST 1	FRIDAY, AUGUST 2	
Registration	Registration	Registration	
Plenary 4 Prut	Plenary 6 Manoonpong	Plenary 8 Gonzalez-Bellido	
Coffee Break	Coffee Break	Coffee Break	
Invited Symposia 5 – 8	Participant Symposia 5 – 8	Invited Symposia 9 – 12	
Lunch 12:45 ISN Council Meeting	Lunch 12:45 Life-Work Balance Session	Lunch	
Plenary 5 Kronauer	Plenary 7 Tessmar-Raible	Plenary 9 Feinerman	
Free Afternoon & Social Program / Excursion	Poster Session II	Coffee Break	
	Coffee Hour	Invited Symposium 13	Participant Symposia 9 – 11
	Poster Session II	ISN Business Meeting	
	Heiligenberg Lecture Mathis	Free Time	
		Banquet Dinner 19:00 – 23:00	

PROGRAM

SUNDAY, JULY 28

Location: Henry-Ford Bau, Freie Universität Berlin, Garystraße 35, 14195 Berlin

16:00 – 21:00 Registration

18:00 – 21:00 RECEPTION AND OPENING CEREMONY

Location: Main Auditorium

18:00 – 18:30 Gathering in the Main Auditorium

18:30 – 19:00 Introductions, welcome addresses & announcements

19:00 – 19:45 Cultural program

19:45 – 21:00 Food & drinks, music & get together



MONDAY, JULY 29

from 08:00 Registration

09:00 – 10:30 PRESIDENTIAL SYMPOSIUM

Chair: Karen Mesce (St. Paul, Minnesota, USA)

Location: Main Auditorium

PS1 09:00 – 09:30

Single nucleus RNA-sequencing reveals transcriptional synchrony across different relationships

Zoe Donaldson, University of Colorado Boulder, USA

PS2 09:30 – 10:00

Honey bee learning and memory: Individuality is the key

Brian Smith, Arizona State University, USA

PS3 10:00 – 10:30

A physiological perspective on the evolution of gestural communication

Matthew Fuxjager, Brown University, USA

10:30 – 11:00 Coffee Break

11:00 – 12:30 PRESIDENTIAL SYMPOSIUM

Chair: Karen Mesce (St. Paul, Minnesota, USA)

Location: Main Auditorium

PS4 11:00 – 11:30

Circuit modules for locomotor speed control

Abdel El Manira, Karolinska Institute, Sweden

PS5 11:30 – 12:00

Cracking circuits with connectomes: A reverse neuroethology perspective

Gwyneth Card, Zuckerman Institute Columbia, University, USA

PS6 12:00 – 12:30

An integrative approach to understand the logic of *C. elegans* motor control

May Zhen, Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital Toronto, Canada

12:30 – 14:00 Lunch

12:45 – 13:45 LIFELONG CAREER SESSION

Location: Room 223 "Senatssaal", then possibility to form smaller groups

14:00 – 15:00 PLENARY 1**Behavioral variables and neural mechanisms underlying helping behavior in mice**

Sanja Bauer Mikulovic (Leibniz Institute for Neurobiology, Germany)

Chair: Constance Scharff (Freie Universität, Berlin, Germany)

Location: Main Auditorium

Short bio: Sanja Bauer Mikulovic studied biomedical engineering at the Technical University of Vienna and received her doctorate in neuroscience from the University of Uppsala in Sweden. Subsequently, she conducted research in Sweden in the Department of Neuroscience as a postdoc on the role of specific types of interneurons in the hippocampus and their importance for oscillations underlying cognitive and emotional behavior. In 2018 she received an international postdoc grant, which enabled her to conduct her research in parallel at the Karolinska Institute in Stockholm and at the German Center for Neurodegenerative Diseases (DZNE) in Bonn. Since January 2021 she is leading her own group Cognition and Emotion at the Leibniz-Institute for Neurobiology, Magdeburg (LIN).

15:00 – 18:00 POSTER SESSION I**16:00 – 17:00 Coffee Hour****18:00 – 19:00 HUBER LECTURE****On the nesting of dynamics in neuronal networks**

Gilles Laurent (Max Planck Institute for Brain Research, Germany)

Chair: Uwe Homberg (Philipps-Universität Marburg, Germany)

Location: Main Auditorium

Short bio: Gilles Laurent is interested in the principles of organization and dynamical behavior of neural circuits. He has worked on olfactory computation in insects, fish, and rodents, and on motor control, local circuits, and vision in insects. His lab now studies sleep (in reptiles), brain evolution, and texture perception and generation, as expressed during camouflage in cephalopods. He studied veterinary medicine and neuroethology in France, learned neuroscience as a postdoc in Cambridge, UK, was a faculty at Caltech, USA between 1990 and 2011 and since 2009, has been a director at the Max Planck Institute for Brain Research in Frankfurt, Germany.

19:00 – 21:00 STUDENT/POSTDOC ICEBREAKER

Organizers: Claire Rusch (Champalimaud Foundation, Portugal) and Saumya Gupta (University of Washington, United States)

Location: Main Auditorium (followed by get-together in the lobby)

TUESDAY, JULY 30

from 08:00 Registration

09:00 – 10:00 PLENARY 2

Of fish and flies: studying the biological basis of sociality in two model organisms

Rui Oliveira (Instituto Universitario, Lisbon, Portugal)

Chair: Laura Quintana (Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay)

Location: Main Auditorium

Short bio: Rui F. Oliveira is Professor and Chair of the Biology and Neuroscience Program at ISPA – University Institute for Psychological Social and Life Sciences and Principal Investigator of the Integrative Behavioral Biology Laboratory at the Gulbenkian Institute of Science (Lisbon, Portugal). His main research interests are the integrative study of social behavior, which combines the study of proximate causes (gene modules, hormones, neural circuits, cognitive processes) and ultimate effects (evolutionary consequences). In particular, he aims to understand how brain and behavior can be shaped by the social environment and how the cognitive, neural and genetic mechanisms underlying social behavior have evolved.

10:00 – 10:30 Coffee Break

10:30 – 12:30 CONCURRENT INVITED SYMPOSIA 1 – 4

INVITED SYMPOSIUM 1

POLARIZATION VISION: FROM EYES TO ACTION

Chair: James Foster (Konstanz University, Germany) and Gregor Belušič (University of Ljubljana, Slovenia)

Location: Lecture Hall C

In addition to brightness and color, polarization is the third quality of light that makes up the visual worlds of animals. Numerous animal species can discriminate and interpret polarized light to inform their behavior (unlike the humans that study them). The study of polarization vision is nearing a critical turning point, as new approaches to imaging natural light environments and the production of dynamic polarization patterns under laboratory conditions are making it feasible to characterize and compare polarization vision across species, from stimulus to behavior. This symposium will highlight recent work driving this change, covering all stages in the neuroethology of polarization vision. Together, the approaches presented by the speakers will provide a more complete functional understanding of polarization vision in nature.

S1.1. 10:30 – 11:00

Polarization sensitivity in butterflies

Gregor Belušič, University of Ljubljana, Slovenia

S1.2 11:00 – 11:30**Importance of ocelli and DRA in bumblebees foraging under different sky conditions***Priscila Araujo, Stockholm University, Sweden***S1.3 11:30 – 12:00****Dynamics of polarization-coding in the central complex of bumblebees***Keram Pfeiffer, JMU Würzburg, Germany***S1.4 12:00 – 12:30****Polarization vision in the dark***Marie Dacke, Lund University, Sweden***INVITED SYMPOSIUM 2****THE BRAIN IN MOTION**

Chair: Floris van Breugel (University of Nevada, Reno, USA)

Location: Lecture Hall A

The brain evolved to solve myriad challenges that typically involve dynamic movement through varied environments. However, the majority of neuroscience over the past century has (necessarily) studied the brain in head-fixed preparations. Thanks to recent technological developments, it is becoming increasingly feasible to study the brain in freely moving animals. The goal of this symposium is to highlight some of these recent technological developments, theoretical advancements for analyzing the resulting data, and recent insights from across organisms of different scales. We hope this symposium will inspire more neuroethologists to “release” their study systems by forging collaborations with scientists that can help address the technical challenges associated with this step.

S2.1. 10:30 – 11:00**High resolution outdoor videography of insects using fast lock-on tracking***Andrew Straw, University of Freiburg, Germany***S2.2 11:00 – 11:30****Neural circuits for active vision and natural behavior in the mouse***Cris Niell, University of Oregon, USA***S2.3 11:30 – 12:00****Quantifying information during active movements in freely moving animals***Floris van Breugel, University of Nevada, Reno, USA***S2.4 12:00 – 12:30****Uncovering spatial cognitive maps in zebrafish using brain-wide imaging in freely moving animals***Jennifer Li and Drew Robson, Max Planck Institute for Biological Cybernetics, Germany*

INVITED SYMPOSIUM 3**NEURAL & BEHAVIORAL PRINCIPLES STRUCTURING VOCAL INTERACTIONS**

Chair: Ava Kiai (Goethe University Frankfurt, Germany) and Jonathan Benichov (Max Planck Institute for Biological Intelligence, Germany)

Location: Lecture Hall D

Vocal behavior is widely exhibited across animal species occupying vastly different ecological niches and facing distinct selection pressures. A diverse subset of these species has evolved the ability to modify the usage or acoustic features of vocalizations in a social context-dependent manner during development or in real-time during social interactions. These socially contingent forms of vocal control often require specialized neural pathways that can, for example, allow auditory information from conspecifics to modulate vocal motor commands. The goal of this symposium is to bring together researchers studying the mechanisms that mediate vocal interactions between individuals in diverse understudied species and vocal behaviors. The basic theme covers how vocal behavior is shaped through vocal interactions and what species-specific or shared sensory motor circuits underlie vocal production dynamics. This symposium will provide an in-depth survey of vocal control mechanisms that both support and are shaped by social dynamics, with the aim of fostering discussion on the commonalities as well as significant distinctions between the neural or behavioral strategies for vocal behavior in mammalian and avian species. Several aspects of vocal behavior, including sensory processing and motor control, are related to a wide range of natural behaviors and may therefore be of interest to the broader community of neuroethologists.

S3.1. 10:30 – 10:54**Deciphering neural circuits for vocal communication: Insights from the singing mice**

Arkarup Banerjee, Cold Spring Harbor Laboratory, USA

S3.2 10:54 – 11:18**Vocal communication in the naked mole-rat**

Alison Barker, Max Planck Institute for Brain Research, Germany

S3.3 11:18 – 11:42**Tracking neural activity from auditory processing to precisely-timed vocal responses during zebra finch call interactions**

Jonathan Benichov, Max-Planck Institute for Biological Intelligence, Germany

S3.4 11:42 – 12:06**Deactivation of a frontal locus of vocal control in the bat modulates vocalization-related dynamics**

Ava Kiai, Goethe University Frankfurt, Germany

S3.5 12:06 – 12:30**Stochastic dynamical systems model of vocal turn-taking and its development in marmoset monkeys**

Daniel Takahashi, Federal University of Rio Grande do Norte, Brazil

INVITED SYMPOSIUM 4**COMMON AND DIVERGENT EVOLUTION OF NEURAL MODULES FOR MEMORY, ACTION SELECTION, PREMOTOR TRANSLATION, AND MOTOR PATTERNING**

Chair: Rhanor Gillette (University of Illinois Urbana-Champaign, USA)

Location: Lecture Hall B

The goal of this symposium is to present arguments for and against deep homologies of nervous system organizations across simple and complex animals, and their origins. The symposium contributes an innovative and integrative view to neuroethological research based on recent data from molecular, neuroanatomical, and electrophysiological studies, which identify commonalities in character and function of neural modules across the phyla, from simpler soft-bodied and unsegmented invertebrates to quite complex, segmented vertebrates and arthropods with jointed skeletons. Other data indicate that major clades evolved motor control for posture and locomotion independently. The presented evidence and discussion will provide an overview of the often-contentious area.

S4.1. 10:30 – 11:00**The PROUST hypothesis: the evolution of the olfactory mind**

Lucia Jacobs, University of California, Berkeley, USA

S4.2 11:00 – 11:30**Evolution of memory: From basic foraging decisions to cognitive map construction**

Ekaterina Gribkova, University of Illinois Urbana-Champaign, USA

S4.3 11:30 – 12:00**Genealogy vs. convergence in evolution of integrative systems: How to make a circuit, and a brain?**

Leonid Moroz, University of Florida, USA

S4.4 12:00 – 12:30**Not much new in the last 500-600 million years?**

Rhanor Gillette, University of Illinois Urbana-Champaign, USA

12:30 – 14:00 Lunch**12:45 – 13:45 INCLUSION & DIVERSITY SESSION**

Chair: Ana Silva (Universidad de la República, Uruguay)

Location: Lecture Hall A**14:00 – 15:00 PLENARY 3****Learning to communicate by listening to others**

Yoko Yazaki-Sugiyama (Okinawa Institute of Science and Technology, Japan)

Chair: Daniela Vallentin (Max Planck Institute for Biological Intelligence, Germany)

Location: Main Auditorium

Short bio: Dr. Yoko Yazaki-Sugiyama is a professor in the Okinawa Institute of Science and Technology (OIST) Graduate University. She received her PhD from Prof. Aoki in Sophia University, Tokyo Japan. She obtained postdoctoral trainings in Duke University with neurobiological study in songbirds and in RIKEN BSI with the research on neuronal mechanism of critical period. Her lab has been working on the neuronal mechanism on early auditory learning, developmental neuronal plasticity, and the critical period of song learning in zebra finch. They also expanded their research to the effect of social interactions.

15:00 – 16:30 CONCURRENT PARTICIPANT SYMPOSIA 1 – 4

PARTICIPANT SYMPOSIUM 1

Chair: Silke Sachse (Max Planck Institute for Chemical Ecology, Jena, Germany)

Location: Lecture Hall D

OLFACTION, TASTE AND CHEMICAL SENSING

T1.1 15:00 – 15:15

The transcriptional logic of ant odorant receptors

Anindita Brahma, The Rockefeller University, USA

T1.2 15:15 – 15:30

Sensory neurobiology of egg laying preference in *Aedes aegypti* mosquitoes

Benjamin Matthews, The University of British Columbia, Canada

T1.3 15:30 – 15:45

Adenosine signaling in glia modulates metabolic state-dependent behavior in *Drosophila*

Jean-Francois De Backer, University of Bonn, Germany

T1.4 15:45 – 16:00

Cave odours as possible destination cues in the long-distance navigation of the Australian Bogong moth *Agrotis infusa*

Linnea Rosberg, Lunds University, Sweden

T1.5 16:00 – 16:15

Unraveling the effects of the short neuropeptide F (sNPF) in Winter bees

Rafael Carvalho da Silva, Sorbonne Université, France

T1.6 16:15 – 16:30

***Drosophila melanogaster* eavesdrops on a yeast quorum-sensing signal to locate food sources**

Eva Vigato, University of Utah, USA

PARTICIPANT SYMPOSIUM 2

Chair: Coen P. H. Elemans (University of Southern Denmark)

Location: Lecture Hall A

MOTOR SYSTEMS, SENSORIMOTOR INTEGRATION, AND BEHAVIOR

T2.1 15:00 – 15:15

Wind gates search states in free flight

Stanley Stupski, University of Nevada, USA

T2.2 15:15 – 15:30**Beyond the buzz: How mosquitoes combine visual and acoustic cues to navigate within swarms***Saumya Gupta, University of Washington, USA***T2.3 15:30 – 15:45****Vision vs. echolocation: Navigational strategies of Egyptian fruit bats amidst sensory conflict***Nikita Finger, Johns Hopkins University, USA***T2.4 15:45 – 16:00****How night-flying mosquitoes rapidly evade invisible looming objects***Florian Muijres, Wageningen University, Netherlands***T2.5 16:00 – 16:15****Touch inhibits feeding through a neural bottleneck in *C. elegans*: a window to a biological information compression system***Elsa Bonnard, Max-Planck-Institute for Neurobiology of Behavior, Germany***T2.6 16:15 – 16:30****The brains of snapping shrimp are protected from shock waves by their helmet-like orbital hoods***Alexandra Kingston, University of Tulsa, USA***PARTICIPANT SYMPOSIUM 3**

Chair: Gary Lewin (Max Delbrück Center, Berlin, Germany)

Location: Lecture Hall C**EVOLUTION AND DEVELOPMENT****T3.1 15:00 – 15:15****Dynamics of adaptability and constraints in the evolution of a learning and memory circuit in Heliconiini butterflies***Max Farnworth, University of Bristol, United Kingdom***T3.2 15:15 – 15:30****Selection for sociality drives divergent brain transcriptomes in zebrafish***Marta Liber, Globalis, Portugal***T3.3 15:30 – 15:45****Evolutionary repurposing of the functional role of the optic tectum in cavefish***Ehud Vinepinsky, École Normale Supérieure, France***T3.4 15:45 – 16:00****The neural basis of defensive behaviour evolution in *Peromyscus* mice***Katja Reinhard, The International School for Advanced Studies (SISSA), Italy*

METABOLISM, BIOLOGICAL RHYTHMS AND HOMEOSTASIS**T3.5 16:00 – 16:15****The blood-brain barrier in stasis: neurovascular changes during mammalian hibernation***Maryann Platt, Yale University, United States***T3.6 16:15 – 16:30****Artificial light at night alters cricket stridulation patterns even in semi-natural environments***Keren Levy, Tel Aviv University, Israel***PARTICIPANT SYMPOSIUM 4**

Chair: Elke K. Buschbeck (University of Cincinnati, USA)

Location: Lecture Hall B**VISION AND PHOTORECEPTION****T4.1 15:00 – 15:15****Functional organization of visual responses to luminance and polarization stimuli in the octopus***Angelique Allen, University of Oregon, USA***T4.2 15:15 – 15:30****The effect of the whole-genome duplication on vision: How does the common barbel (*Barbus barbus*) see?***Zuzana Konvickova, Charles University, Czech Republic***T4.3 15:30 – 15:45****The frog's approach to colour vision in the dark: retinal computations and connections***Carola Yovanovich, University of Sussex, United Kingdom***T4.4 15:45 – 16:00****Seahorse visual systems: Multiple regional specialisations within the retina support small prey capture***Stephanie Heyworth, The University of Queensland, Australia***T4.5 16:00 – 16:15****Chicken-egg question of evolution of color vision and information theory***Misha Vorobyev, University of Auckland, New Zealand***T4.6 16:15 – 16:30****Life in dim light: Visual development in nocturnal and deep-sea fishes***Lily Fogg, University of Basel, Switzerland***16:30 – 17:00 Coffee Break**

17:00 – 19:00 YOUNG INVESTIGATOR SYMPOSIUM

Chair: Andrea Simmons

Location: Main Auditorium

YI1 17:00 – 17:30

Connectomic mapping of navigational neural circuits in bees, ants and shrimps

Marcel Sayre, Macquarie University, Australia

YI2 17:30 – 18:00

The aerial dogfighting strategy of dragonflies

Samuel Fabian, Imperial College London, United Kingdom

YI3 18:00 – 18:30

Neuroethological aspects of spatial navigation in toads and sleep in mice: a story of two tales

Maria Ines Sotelo, CONICET, Argentina

YI4 18:30 – 19:00

Multiple compass cues guide Monarch butterflies during migration

Robin Grob, NTNU Faculty of Natural Sciences Realfagbygget, Norway



WEDNESDAY, JULY 31

from 08:00 Registration

09:00 – 10:00 PLENARY 4

Motor control of facial expressions in non-human primates

Yifat Prut (Hebrew University, Israel)

Chair: Coen P.H. Elemans (University of Southern Denmark)

Location: Main Auditorium

Short bio: Yifat Prut is interested in the way cortical-to-subcortical interactions shape adaptive and flexible motor behavior. She has worked on the motor system of non-human primates, studying the spinal cord, the motor cortex and the motor thalamus. Her lab now studies cerebellar control of upper limb movements and motor control of facial expressions. She studied neurobiology in Israel, learned about motor system physiology as a postdoc in Seattle, USA and joined the Edmond and Lily Safra center for Brain Sciences in 2001. In 2018 she spent a year at Rockefeller University, New York studying the neural networks dedicated for facial perception and expression.

10:00 – 10:30 Coffee Break

10:30 – 12:30 CONCURRENT INVITED SYMPOSIA 5 – 8

INVITED SYMPOSIUM 5

REBALANCING DIVERSITY OF ANIMAL MODELS IN NEUROPHYSIOLOGY AND SENSORY BIOLOGY: USING MODERN MOLECULAR TOOLS TO STUDY NEUROPHYSIOLOGY AND SENSORY BIOLOGY OF NON-STANDARD ANIMAL MODELS

Chair: Elena O. Gracheva (Yale University, USA)

Location: Lecture Hall A

The advent of advanced molecular technologies fueled a massive progress in biological sciences, enabling the manipulation and visualization of living systems at a stunning level of detail. Concurrently, the spectrum of species utilized for research declined sharply, as did our perspective on general biological principles. Is it at all possible to comprehend the complexity of life if 99.9% of efforts are applied towards a handful of species? The answer is certainly no. Despite a widely appreciated need to broaden the spectrum of lab species to gain a more comprehensive perspective on core biological principles, most attempts to develop new animal models have been thwarted by the scarcity of applicable experimental tools. Recent breakthroughs in CRISPR-based genome editing, structural biology, deep sequencing, super-resolution imaging, and other areas allow us to study life at a level that has never before been accessible. The goal of this symposium is to highlight how modern state-of-the-art manipulative tools can be applied to study non-standard animal models. The basic theme of the symposium is sensory biology and interoception, with an emphasis on animals that evolved efficacious solutions to complex biological problems and environmental challenges.

S5.1 10:30 – 11:00**Functional evolution of the taste and digestive system in birds***Maude Baldwin, Max-Planck Institute for Ornithology, Germany***S5.2 11:00 – 11:30****Cellular and molecular adaptations to acute mechanosensitivity in the bill of tactile foraging birds***Slav Bagriantsev, Yale University, USA***S5.3 11:30 – 12:00****Neuropeptide regulation of mosquito host-seeking behavior***Laura Duvall, Columbia University, USA***S5.4 12:00 – 12:30****Neuroendocrine responses to long-term water deprivation in a mammalian hibernator***Maddy Junkins, Yale University, USA***INVITED SYMPOSIUM 6****FINDING FOOD, HOME AND FRIENDS: NEUROETHOLOGY OF NAVIGATION ACROSS SPECIES AND BEHAVIORS**

Chair: Angelo Forli (University of California, Berkeley, USA)

Location: Lecture Hall C

This symposium focuses on the neural mechanisms that allow a highly diverse set of species (bats, frogs, and birds) to successfully navigate their spatial and social environments. Specifically, the speakers will illustrate how a particular behavioral trait of an animal can be leveraged to shed light on the relationship between neural circuits (in particular, the hippocampus) and different forms of navigation, viewed as the process of finding important resources, including food, shelter, and conspecifics. The presented results will include the application of different methodologies across species, ranging from ethological studies in the field, neurophysiological recordings in the lab, and behavioral and genetic characterizations. Overall, this symposium will highlight the importance of a comparative and diversified approach for the study of the neural mechanisms underlying navigation.

S6.1 10:30 – 11:00**Neural computations during naturalistic spatial behaviors in bats***Angelo Forli, University of California, Berkeley, USA***S6.2 11:00 – 11:30****Integrating neural modeling, robotics, and behavior to study magnetoreception***Hazel Havens, University of North Carolina Chapel Hill, USA***S6.3 11:30 – 12:00****GPS-tracking of pigeons while homing reveals a broader functional profile of the avian hippocampus: Visual-spatial attention/perception***Verner Bingman, Bowling Green State University, USA*

S6.4 12:00 – 12:30**Coding of episodic memories in the hippocampus of a food-caching bird***Dmitriy Aronov, Columbia University, USA***INVITED SYMPOSIUM 7****NEURAL BASIS OF FLEXIBLE INNATE BEHAVIORS**

Chair: Katja Reinhard (Scuola Internazionale Superiore di Studi Avanzati, Italy) and Karl Farrow (KU Leuven, Belgium)

Location: Lecture Hall B

This symposium will bring together researchers studying how neural circuits mediate context-dependent behavior in different species of insects and mammals. The series of talks will focus on the aspects of behavior that are modulated by context and how such behavioral flexibility relates to changes in neural circuitry and activity. Research with *Drosophila* will provide insights into how conflicting stimuli are processed to produce appropriate actions (i.e., how changes in the internal state and environment affect sensory motor processing), while findings in rodents and marsupials will address how different species adjust their behaviors across evolutionary timescales to adapt to specific habitats. Finally, the symposium will include a discussion of computational approaches used to model the initiation and modulation of fear behaviors. By sharing new results obtained from these diverse perspectives, we hope to identify common solutions and key species-specific specializations that enable the flexible execution of innate behaviors among different species.

S7.1 10:30 – 11:00**Is love blind? Mating proximity gates threat perception***Carolina Rezaval, University of Birmingham, UK***S7.2 11:00 – 11:30****Mapping neural circuits of state-dependent behavior in the fly***Ilona Grunwald Kadow, Universität Bonn, Germany***S7.3 11:30 – 12:00****Vision for predator evasion and predation***Daniel Kerschensteiner, Washington University School of Medicine in St. Louis, USA***S7.4 12:00 – 12:30****A theory of rapid behavioral inferences under the pressure of time***Wiktor Mlynarski, Ludwig-Maximilians-Universität Munich, Germany*

INVITED SYMPOSIUM 8**MECHANISMS OF COLOR VISION: GENES, EYES, NEURONAL CIRCUITS, AND BEHAVIOR**

Chair: Ayse Yilmaz-Heusinger (Lund University, Sweden), Natalie Hempel de Ibarra (Exeter University, UK), and Almut Kelber (Lund University, Sweden)

Location: Lecture Hall D

Color vision represents a vital aspect of perception that ultimately enables many animals, including humans, to thrive in nature. Nevertheless, despite recent advances in scientific technology, very little is known about the underlying neuronal mechanisms. Investigations of color vision in arthropods, which pioneered the field due to their easily accessible nervous system and the development of new approaches, have delivered significant advances in our understanding. This symposium aims to illuminate the advantage of comparative approaches for illuminating fundamental questions about the mechanisms and behavioral functions of color vision. We will bring together world leaders in the study of arthropod and vertebrate color vision, spanning across different levels of explanation, from opsins to neuronal circuits and behaviors, with novel insights arising from advances in neurogenetic techniques and innovative behavioral paradigms (e.g., in spatial learning and navigation). The talks will offer a perspective on recent trends and an outlook on future directions to stimulate debate in the meeting. The focus on underlying mechanisms of color vision and its impact is particularly timely and innovative, with an integrative view ensured by securing speakers from disparate academic specializations and locations.

S8.1 10:30 – 11:00**Colour vision in marine fishes: insights from genetics to behaviour**

Karen Cheney, University of Queensland, Australia

S8.2 11:00 – 11:30**Ancestral photoreceptor diversity as the basis of visual behaviour**

Tom Baden, University of Sussex, UK

S8.3 11:30 – 12:00**Mechanisms of spectral orientation in dung beetles**

Ayse Yilmaz-Heusinger, Lund University, Sweden

S8.4 12:00 – 12:30**Sex-linked gene traffic underlies the acquisition of sexually dimorphic UV color vision in *Heliconius* butterflies**

Adriana Briscoe, University of California, Irvine, USA

12:30 – 14:00 Lunch**12:45 – 13:45 ISN COUNCIL MEETING**

Location: Room 223 "Senatssaal"

14:00 – 15:00 PLENARY 5**The evolution of ant social behavior**

Daniel Kronauer (Rockefeller University, New York, USA)

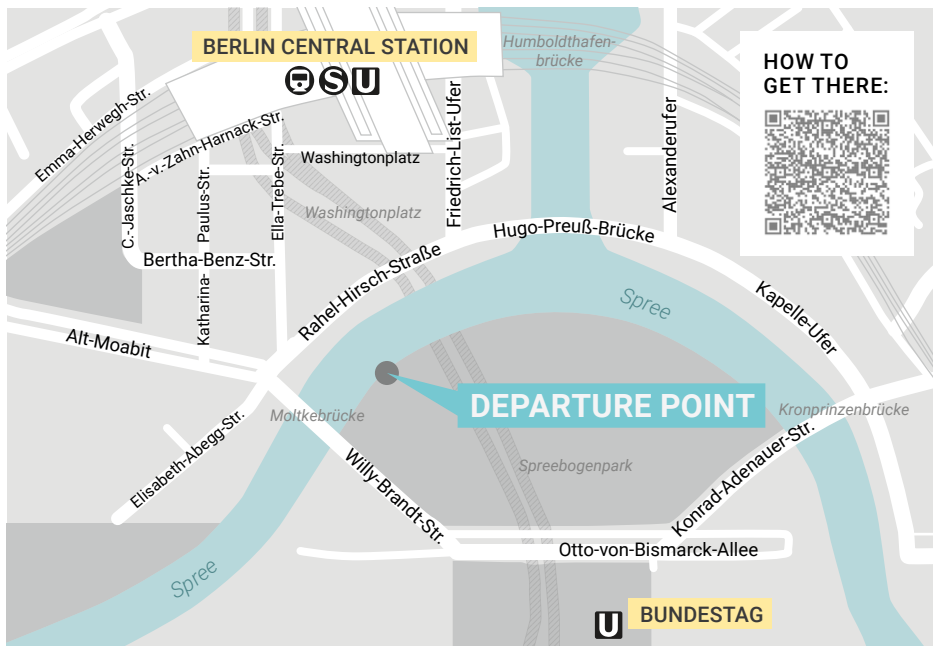
Chair: Jan Clemens (Carl von Ossietzky University, Oldenburg, Germany)

Location: Main Auditorium

Short bio: Daniel Kronauer received his diploma in biology from the University of Würzburg in Germany in 2003, and his Ph.D. in 2007 from the University of Copenhagen in Denmark, where he worked with Koos Boomsma on social dynamics in army ants. After a brief postdoctoral assignment at the University of Lausanne, he was elected as a junior fellow to the Harvard Society of Fellows in 2008. He joined The Rockefeller University as assistant professor in 2011 and was promoted to associate professor in 2018, and to full professor in 2024. He has been an investigator of the Howard Hughes Medical Institute since 2021.

15:00 – 19:00 FREE AFTERNOON & SOCIAL PROGRAM / EXCURSION

If you have booked the tourist program, then a ticket for a two hour boat tour on the Spree river has been secured for you. The boat casts off at 16:30 at Willy-Brandt-Straße / Moltkebrücke (close to Berlin Central Station).



THURSDAY, AUGUST 1

from 08:00 Registration

09:00 – 10:00 PLENARY 6

Machine intelligence inspired by nature: From locomotion to manipulation and navigation

Poramate Manoonpong (University of Southern Denmark, Denmark)

Chair: Barbara Webb (University of Edinburgh, UK)

Location: Main Auditorium

Short bio: Poramate Manoonpong is a Professor of Biorobotics at the University of Southern Denmark, Denmark and has also served as a Professor of the School of Information Science and Technology at Vidyasirimedhi Institute of Science & Technology, Thailand. He has published over 150 publications in journals (e.g., Nature Physics, Nature Machine Intelligence, IEEE Transactions on Cybernetics) and conferences. His research focuses on bio-inspired robotics, neurorobotics, neural locomotion control and biomechanics. His results have been featured in news outlets, such as IEEE Spectrum as well as cover pages of Nature Machine Intelligence, Advanced Intelligent Systems, Advanced Theory and Simulations.

10:00 – 10:30 Coffee Break

10:30 – 12:30 CONCURRENT PARTICIPANT SYMPOSIA 5 – 8

PARTICIPANT SYMPOSIUM 5

Chair: Laura Quintana (Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay)

Location: Lecture Hall C

SOCIAL BEHAVIOR AND NEUROMODULATION

T5.1 10:30 – 10:45

The neural basis of parent-offspring communication in poison frogs

Billie Goolsby, Stanford University, United States

T5.2 10:45 – 11:00

Evolution of predatory behaviour and aggression in nematodes via noradrenergic-like circuits

Leonard Böger, Max Planck Institute for Neurobiology of Behavior, Germany

T5.3 11:00 – 11:15

A novel framework for social learning in *Drosophila*

Frederic Roemschied, University Medical Center Göttingen, Germany

T5.4 11:15 – 11:30

Parental early social experiences have neurodevelopmental effects on the mesolimbic reward system in the offspring

Diogo Antunes, University of Bern, Switzerland

T5.5 11:30 – 11:45**Exploring interactions between the circadian clock and memory centers in honey bees***Tiyasa Roy, National Centre for Biological Sciences, India***T5.6 11:45 – 12:00****Parasites exploit plasticity to reprogram the brain of social wasps***Floria Uy, University of Rochester, United States***T5.7 12:00 – 12:15****Steroid modulation of aggressive behavior in *Gymnotus omarorum*: a seasonal perspective***Guillermo Valiño, Instituto Clemente Estable, Uruguay***OTHER****T5.8 12:15 – 12:30****Flight dynamic of swarming malaria mosquitoes***Antoine Cribellier, Wageningen University, Netherlands***PARTICIPANT SYMPOSIUM 6***Chair: Sue Anne Zollinger (Manchester Metropolitan University, Manchester, UK)***Location: Lecture Hall D****MOTOR SYSTEMS, SENSORIMOTOR INTEGRATION, AND BEHAVIOR****T6.1 10:30 – 10:45****How spiders actively modulate web-vibration sensing during prey capture***Hsin-Yi-Hing, Johns Hopkins University, United States***T6.2 10:45 – 11:00****Sensory integration of visual and mechanosensory feedback in the hawkmoth, *Daphnis nerii****Sanjay Sane, National Centre for Biological Sciences, India***T6.3 11:00 – 11:15****Adaptation of a sensorimotor internal model to environmental context in freely swimming electric fish***Avner Wallach, Technion, Israel***AUDITORY SYSTEM AND ACOUSTIC SIGNALING****T6.4 11:15 – 11:30****Sound localization behavior in the Barking Gecko (*Ptenopus garrulus*)***Catherine Carr, University of Maryland, United States***T6.5 11:30 – 11:45****Barn owls do have ageless ears***Christine Köppl, Carl von Ossietzky Universität, Germany*

T6.6 11:45 – 12:00**Variation in peripheral auditory function among urban and rural soundscapes***Alejandro Velez, University of Tennessee, United States***T6.7 12:00 – 12:15****Tag-based measurement of auditory brainstem responses during echolocation in freely swimming trained and wild toothed whales***Adam Smith, University of Southern Denmark, Denmark***ELECTROSENSORY SYSTEM****T6.8 12:15 – 12:30****Hot Fish: Synchronization of behavioral rhythms by temperature in weakly electric fish***Juan Ignacio Vásquez, Instituto Clemente Estable, Uruguay***PARTICIPANT SYMPOSIUM 7**

Chair: Uwe Homberg (Philipps-Universität Marburg, Germany)

Location: Lecture Hall A**SPATIAL ORIENTATION AND NAVIGATION****T7.1 10:30 – 10:45****Hydrostatic pressure modulated cells in the goldfish telencephalon***Ronen Segev, Ben-Gurion University of the Negev, Israel***T7.2 10:45 – 11:00****In-flight pinna orientation sacrifices interaural intensity difference acuity for sonar range and directionality in aerial hawking echolocating bats***Felix Häfele, University of Southern Denmark, Denmark***T7.3 11:00 – 11:15****Comparative connectomics of the insect central complex***Stanley Heinze, Lund University, Sweden***T7.4 11:15 – 11:30****Eye capping suggests eyes drive independent motor control functions during visual navigation in ants***Cornelia Buehlmann, University of Sussex, United Kingdom***T7.5 11:30 – 11:45****Hippocampal encoding of object distance in echolocating bats***Aditya Krishna, Johns Hopkins University, United States***T7.6 11:45 – 12:00****Neural mechanisms for a stable head direction estimate in dynamic, naturalistic visual environments***Hannah Haber Kern, University of Würzburg, Germany*

T7.7 12:00 – 12:15**Memory processes involved in dance-distance communication of honey bees***Arumoy Chatterjee, University of California, Santa Barbara, United States***OTHER****T7.8 12:15 – 12:30****Innate face detectors in the endbrain of young domestic chicks***Dmitry Kobylkov, University of Trento, Italy***PARTICIPANT SYMPOSIUM 8**

Chair: Brian Smith, Arizona State University, United States

Location: Lecture Hall B**LEARNING, MEMORY AND COGNITION****T8.1 10:30 – 10:45****Localization and tuning of face cell-like neurons in a social wasp***Christopher Jernigan, Cornell University, United States***T8.2 10:45 – 11:00****Spatial reversal learning in poison frogs***Ricardo Cossio, Stanford University, United States***T8.3 11:00 – 11:15****Wings of change: plasticity in steering motor neurons underlies operant self-learning in *Drosophila****Björn Brembs, Universität Regensburg, Germany***T8.4 11:15 – 11:30****Need to remember: Dolphins recall their own actions after long delays***Sara Torres Ortiz, University of Southern Denmark, Denmark***T8.5 11:30 – 11:45****Extending the Q-learning reinforcement learning algorithm to investigate the role of selective attention in animal movements***Valentin Lecheval, Humboldt-Universität zu Berlin, Germany***T8.6 11:45 – 12:00****Learning to fly: the role of experience on flight behaviours in juvenile zebra finches***Emma Borsier, University of Oxford, United Kingdom***T8.7 12:00 – 12:15****Primates persist where mice explore: An interspecies comparison of decision-making***Veldon-James Laurie, Université de Montréal, Canada*



OTHER

T8.8 12:15 – 12:30

Sensory processing and the socioecology of predatory ants

Frank Azorsa, Boston University, United States

12:30 – 14:00 Lunch

12:45 – 13:45 WORK-LIFE BALANCE & MENTAL HEALTH SESSION

Chair: Elke K. Buschbeck (University of Cincinnati, Cincinnati, USA), Paloma Gonzalez-Bellido (University of Minnesota, Minneapolis, USA) and Shubham Rathore (NIMH/NIH)

Location: Lecture Hall A

14:00 – 15:00 PLENARY 7**The importance of time and natural light for behavior and how humans impact on this***Kristin Tessmar-Raible (Max Perutz Labs, Vienna, Austria; AWI, Bremerhaven, Germany)*

Chair: Elke K Buschbeck (University of Cincinnati, Cincinnati, USA)

Location: Main Auditorium

Short bio: Prof. Tessmar-Raible leads the research group for chronobiology at the University of Vienna, where she spearheads scientific insights into the molecular and cellular mechanisms of circadian, but especially non-circadian rhythms and non-visual effects of light. The scientific value and frontier character of her work is attested by multiple awards, e.g., two ERC grants, an EMBO membership, a Helmholtz Distinguished Professorship at the Alfred Wegener Institute and University of Oldenburg, Germany. Personally, Kristin Tessmar-Raible knows the challenges of dual career couples. With the scientist Florian Raible she shares the work of raising their three children.

15:00 – 18:00 POSTER SESSION II**16:00 – 17:00 Coffee Hour****18:00 – 19:00 HEILIGENBERG LECTURE****Next-generation movement monitoring with deep learning and generative AI***Mackenzie Mathis (Swiss Federal Institute of Technology, Lausanne, Switzerland)*

Chair: Coen P.H. Elemans (University of Southern Denmark)

Location: Main Auditorium

Short Bio: Prof. Mackenzie W. Mathis is the Bertarelli Foundation Chair of Integrative Neuroscience and an Assistant Professor at the Swiss Federal Institute of Technology, Lausanne (EPFL). Following the award of her PhD at Harvard University in 2017 with Prof. Naoshige Uchida, she was awarded the prestigious Rowland Fellowship at Harvard to start her independent laboratory (2017-2020). She is an ELLIS Scholar, Vallee Scholar, a former NSF Graduate Fellow, and her work has been featured in the news at Bloomberg BusinessWeek, Nature, and The Atlantic. She was awarded the FENS EJN Young Investigator Prize in 2022 and the Eric Kandel Young Neuroscientist Prize in 2023. Her lab works on mechanisms underlying adaptive behavior in intelligent systems. Specifically, the laboratory combines machine learning, computer vision, and experimental work in rodents with the combined goal of understanding the neural basis of adaptive motor control.

FRIDAY, AUGUST 2

from 08:00 Registration

09:00 – 10:00 PLENARY 8

Neuroethology of aerial predation with compound eyes

Paloma Gonzalez-Bellido (University of Minnesota, Minneapolis, USA)

Chair: Kentaro Arikawa (The Graduate University for Advanced Studies, Kanagawa, Japan)

Location: Main Auditorium

Short bio: Paloma is currently an Associate Professor at the U. of Minnesota. She grew up in Spain, but first learned about the neuroethology field as an undergraduate at the U. of Queensland. For her PhD work on fly vision (U. of Sheffield, UK, 2006-2009), she received the Capranica Prize. As a postdoc at Janelia HHMI Campus (2010-2011), she studied the neural basis of predation on dragonflies (PNAS Cozzarelli prize). In 2013, after a 2nd Postdoc at the Marine Biological Laboratory studying cephalopods, she founded the Fly Systems Laboratory, with a focus on understanding the neural basis of aerial predation in invertebrates.

10:00 – 10:30 Coffee Break

10:30 – 12:30 CONCURRENT INVITED SYMPOSIA 9 – 12

INVITED SYMPOSIUM 9

NEUROETHOLOGICAL RESPONSES TO ANTHROPOGENIC CHANGE

Chair: Sue Anne Zollinger (Manchester Metropolitan University, UK) and Jinhong Luo (Central China Normal University, China)

Location: Lecture Hall A

Much work over the past 20 years has brought to light the many ways in which animals respond behaviorally to anthropogenic changes, from noise, light, or chemical pollutant exposure to global warming, often with profound impacts on their fitness. However, much less is known about the neurological mechanisms that shape the observed changes in behavior. The aim of this symposium is to bring together insights from recent research on the neuroethological changes triggered by these widespread anthropogenic factors. The symposium will feature speakers working on a variety of systems, different types of anthropogenic disturbance, and different behaviors and sensory modalities, with the goal of stimulating discussion and increasing the scope of our understanding about how human-altered environments impact neural systems.

S9.1. 10:30 – 10:54

Causes and consequences of sleep disruption in city-living wildlife

John Lesku, La Trobe University, Australia

S9.2 10:54 – 11:18**Some don't like it hot: Exploring the effects of temperature on insect pollinator sensing and behaviour***Emily Baird, Stockholm University, Sweden***S9.3 11:18 – 11:42****Vulnerability of bats to anthropogenic noise***Jinhong Luo, Central China Normal University, China***S9.4 11:42 – 12:06****Environmental noise statistics modulates sound encoding in rat auditory cortical neurons***Natsumi Homma, University of Cambridge, UK***S9.5 12:06 – 12:30****What's the trouble with noisy neighbours? - Impacts of chronic noise on songbird physiology and behaviour***Sue Anne Zollinger, Manchester Metropolitan University, UK***INVITED SYMPOSIUM 10****UNEXPECTED MENTAL TIME TRAVEL**

Chair: Auguste M. P. von Bayern (Max Planck Institute for Biological Intelligence, Germany) and Nicola S. Clayton (University of Cambridge, UK)

Location: Lecture Hall B

In theory, a flexible episodic memory system may be adaptive under certain socio-ecological circumstances. Mental time travel abilities have recently been reported in several taxa, yet it remains a challenge to distinguish episodic recall or prospection from alternative explanations, such as rule learning or semantic knowledge. The goal of the symposium is to inspire discussion about recent new approaches, such as incidental encoding and the "unexpected question" paradigm among scientists working on distantly related vertebrate taxa and cephalopods. The basic theme of the symposium is investigating episodic memory and episodic prospection in animals. Can species as different as a cephalopod and a dog encode personally experienced episodes in their brains so that information irrelevant at the time of encoding (i.e., information within remembered events) and thus encoded incidentally can later be accessed?

S10.1 10:30 – 11:00**Mental time travel in the rat***Jonathon Crystal, Indiana University Bloomington, USA***S10.2 11:00 – 11:30****Do dogs remember?***Claudia Fugazza, Eötvös University, Hungary***S10.3 11:30 – 12:00****Mental time travels: insights from cephalopod molluscs***Christelle Jozet-Alves, University of Caen, France*

S10.4 12:00 – 12:30**Parrots remember accidentally encoded own actions***Auguste M. P. von Bayern, Max Planck Institute for Biological Intelligence, Germany***INVITED SYMPOSIUM 11****SOUND AND VIBRATION COMMUNICATION IN ARTHROPODS**

Chair: Hannah ter Hofstede (University of Windsor, Canada) and Manuela Nowotny (Friedrich-Schiller-University Jena, Germany)

Location: Lecture Hall D

This symposium elucidates how acoustic and vibratory signal detection can interact in a wide range of arthropods, such as insects and spiders, and the implications of these interactions for animal communication. Most animals use multiple modalities for communication, and behavioral responses to signals can also depend on environmental cues detected by multiple senses. Many arthropods use both airborne sound and substrate-borne vibrations for finding a mate, avoiding predators, or locating food and have receptors that are specific to one modality or responsive to both. Recent progress in the field of biotremology has revealed the vast number of arthropods that use vibrational signals for communication and how this can shape acoustic communication. The current state of understanding in the neuroethology of biotremology and bioacoustics will be highlighted with the aim of encouraging fruitful discussions among the conference participants. The combination of talks will fuse acoustic and vibratory themes, including anatomical, biomechanical, neurophysiological, and behavioral data.

S11.1 10:30 – 11:00**Evolution and development of insect vibration receptor organs***Johannes Strauß, Justus Liebig University Giessen, Germany***S11.2 11:00 – 11:30****Multimodal communication in crickets and katydids***Hannah ter Hofstede, University of Windsor, Canada***S11.3 11:30 – 12:00****What sets the communication frequency in arthropod communication?***Natasha Mhatre, Western University, Canada***S11.4 12:00 – 12:30****Balanced network activity for the processing of structured acoustic signals in bushcrickets***Manuela Nowotny, Friedrich-Schiller-University Jena, Germany*

INVITED SYMPOSIUM 12**THE INTERPLAY OF SOCIAL BEHAVIORS AND BIOLOGICAL CLOCKS**

Chair: Ana Silva (Universidad de la República, Uruguay)

Location: Lecture Hall C

Most people who study circadian rhythms focus on sleep/wake cycles as a clock-controlled behavior, whereas people who study social behaviors often do not consider the effect of the clock. This symposium will highlight how these two areas of study are interconnected. Endogenous timekeeping mechanisms allow organisms to anticipate daily changes in their environment, adjust their physiology and behavior, and anticipate those changes. Synchronizing daily activities with conspecifics provides an adaptive advantage, and the circadian clock has been shown to control multiple social behaviors in different species. Reciprocally, social cues can serve as synchronizing factors for the circadian clock. Social entrainment is particularly important in social animals living under constant environmental conditions, where some members of the group may not be exposed to daily changes in temperature and light. Studying the interactions between the circadian clock and social behaviors at multiple levels of analysis represents an integrative view of neuroethology. Each of the invited speakers focuses on a different aspect of these interactions, and their talks involve a broad range of techniques, from neurogenetics and genomics to behavioral studies in natural settings, thereby providing an innovative perspective on the field of neuroethology.

S12.1 10:30 – 11:00**The influence of the social environment on the brain circadian transcriptome of two social bees differing in the level of social complexity**

Guy Bloch, The Hebrew University of Jerusalem, Israel

S12.2 11:00 – 11:30**Sexual dimorphism in the *Drosophila* circadian System**

Maria de la Paz Fernandez, Barnard College of Columbia University, USA

S12.3 11:30 – 12:00**Aquatic night owls? Behavioral rhythms of African electric fish**

Stefan Mucha, Humboldt Universität zu Berlin, Germany

S12.4 12:00 – 12:30**Temperature and social context modulate daily rhythms of behavior in the wild**

Adriana Migliaro, Universidad de la República, Uruguay

12:30 – 14:00 Lunch

14:00 – 15:00 PLENARY 9**Collective puzzle solving by ants and humans***Ofer Feinerman (Weizmann Inst, Israel)*

Chair: Amir Ayali (Tel Aviv University, Tel Aviv, Israel)

Location: Main Auditorium

Short bio: Ofer Feinerman did his undergrad in the Hebrew University in Jerusalem where he studied physics and math and wrote a Master's thesis on the subject of string theory. For his PhD, Ofer switched from physics to biology and from theory to experiment and studied neuroscience in the Weizmann Institute of Science. For his post-doc he studied the immune system at Memorial Sloan Kettering Cancer Research Center in New York. Since 2011, he studies social insects as a faculty member in the Department of Physics of Complex Systems in the Weizmann Institute of Science.

15:00 – 15:30 Coffee Break**15:30 – 17:00 INVITED SYMPOSIUM 13****CEPHALOPOD NEUROETHOLOGY**

Chair: Paul Katz (University of Massachusetts, Amherst, USA)

Location: Lecture Hall A

There is a growing interest in cephalopod neuroethology. Cephalopods have fundamentally different behaviors than other phyla, forcing us to reconsider what are universal principles. This symposium examines different aspects of cephalopod neuroethology to give a variety of views on these fascinating creatures. Topics range from electrophysiology that examines arm movements, their social behavior and camouflage and neuroendocrinology and reproductive strategies.

S13.1 15:30 – 16:00**Neural basis of visual processing in octopus***Cris Niell, University of Oregon, USA***S13.2 16:00 – 16:30****The neural basis of cuttlefish camouflage***Tessa Montague, Columbia University, USA***S13.3 16:30 – 17:00****Death and the octopus: neuroendocrine control of reproduction and lifespan in *Octopus bimaculoides****Z Yan Wang, University of Washington, USA*

15:30 – 17:00 CONCURRENT PARTICIPANT SYMPOSIA 9 – 11**PARTICIPANT SYMPOSIUM 9**

Chair: Rüdiger Krahe (Humboldt-Universität zu Berlin, Germany)

Location: Lecture Hall C

AUDITORY SYSTEM AND ACOUSTIC SIGNALING

T9.1 15:30 – 15:45

A bat's tale of auditory processing and social communication

Angeles Salles, University of Illinois at Chicago, USA

T9.2 15:45 – 16:00

Unbiased whole-brain calcium imaging reveals parallel and sequential auditory processing and specific tuning to vocalizations in a transparent and vocalizing teleost, *Danio rerio*

Jörg Henninger, Charité Universitätsmedizin Berlin, Germany

T9.3 16:00 – 16:15

Neural and behavioral evolution in an eavesdropper with a rapidly evolving host

Norman Lee, St. Olaf College, USA

OTHER SENSORY SYSTEMS (MECHANORECEPTION, ANEMORECEPTION, THERMORECEPTION, HYGRORECEPTION AND NOCICEPTION)

T9.4 16:15 – 16:30

Evolution of temperature preference behavior in *Drosophila*

Matthew Capek, Northwestern University, United States

T9.5 16:30 – 16:45

The precise sense of time of harbor seals

Caroline Spratte, University of Rostock, Germany

T9.6 16:45 – 17:00

Bees learn local cues differently than distal panorama cues in a spatial memory task

Jerome Beetz, Würzburg University, Germany

PARTICIPANT SYMPOSIUM 10

Chair: Lauren Sumner-Rooney (Museum für Naturkunde, Berlin, Germany)

Location: Lecture Hall B

METHODS AND EDUCATION

T10.1 15:30 – 15:45

Creating 3D brain atlases of poison frogs and swordtail fish

Ashlyn Callan, Stanford University, United States

T10.2 15:45 – 16:00**YORU: Animal behavior recognition system with object detection algorithm***Hayato Yamanouchi, Nagoya University, Japan***VISION AND PHOTORECEPTION****T10.3 16:00 – 16:15****The visuomotor transformations underlying defensive behaviors and hunting***Julie Semmelhack, The Hong Kong University of Science and Technology, Hong Kong***T10.4 16:15 – 16:30****Seeing the vibrant colours underwater: Unravelling the spectral processing and colour constancy of mantis shrimps' colour vision***Ching-Wen Judy, Queensland Brain Institute, Australia***T10.5 16:30 – 16:45****High-resolution vision in a pelagic polychaete - Why have alciopid worms evolved enormous eyes?***Michael Bok, Lund University, Sweden***T10.6 16:45 – 17:00****Jumping spider vision uses a conserved set of three opsins with diverse protein localization patterns across species***Megan Porter, University of Hawai'i at Mānoa, United States***PARTICIPANT SYMPOSIUM 11**

Chair: Amir Ayali (Tel Aviv University, Tel Aviv, Israel)

Location: Lecture Hall D

MOTOR SYSTEMS, SENSORIMOTOR INTEGRATION AND BEHAVIOR**T11.1 15:30 – 15:45****Daily vocal exercise is necessary for peak performance singing in a songbird***Iris Adam, University of Southern Denmark, Denmark***T11.2 15:45 – 16:00****A sensorimotor understanding of spider orb-web construction***Andrew Gordus, Johns Hopkins University, United States***T11.3 16:00 – 16:15****Sleep disruption improves behavioral performance in zebrafish larvae***Hanna Zwaka, Leibniz Institute for Neurobiology, Germany***T11.4 16:15 – 16:30****The surprising pulsating soft coral: where neurobiology meets the reef***Elinor Nadir, Tel Aviv University, Israel*

T11.5 16:30 – 16:45**Octopus visual perception of motion***Letizia Zullo, IIT & IRCCS Ospedale Policlinico San Mer, Italy***T11.6 16:45 – 17:00****Residual vocal capabilities and diverse recovery patterns after brain injury revealed by social context***Raghav Rajan, IISER Pune, India***17:00 – 18:00 ISN BUSINESS MEETING**

Location: Main Auditorium

18:00 – 19:00 Free Time**19:00 – 23:00 BANQUET DINNER**

Location: Maritim proArte Hotel Berlin, Friedrichstraße 151/ Dorotheenstraße 65, 10117 Berlin (close to S-Bahn Friedrichstraße)



POSTER SESSION I

Note: The poster board numbers (1 – 260) will remain the same throughout the entire meeting. Your board number is the number after the dot, so PS1.057 is poster board 57.

You are welcome to hang up your poster starting Sunday during registration. Please remove your poster by Tuesday evening, July 30th. The posters of session 2 can be hung up on Wednesday between 8 AM and 9 AM. This guarantees that the posters of both sessions are on view for roughly an equal amount of time during the conference.

During the poster session, please be at your poster, 15:00 – 16:30 for even poster numbers and 16:30 – 18:00 for odd poster numbers.

AUDITORY SYSTEM AND ACOUSTIC SIGNALING

- PS1.001 How the auditory brainstem of bats detects regularity deviations in a naturalistic stimulation paradigm**
Johannes Wetekam, Goethe University Frankfurt
- PS1.002 Prey detection strategy in echolocating bats -doppler shift compensation as a S/N improving strategy-**
Soshi Yoshida, Doshisha University
- PS1.003 Combination of 3D photogrammetry and the boundary element method as a noninvasive method of modelling head related transfer functions in bats**
Karsten Vesterholm, University of Southern Denmark
- PS1.004 Neural substrate for echo delay and phase perception in FM bats**
Andrea Simmons, Brown University
- PS1.005 In-air and underwater hearing of turtles and tortoises from four families**
Jakob Christensen-Dalsgaard, University of Southern Denmark
- PS1.006 Sound perception differs between sexes in a wild songbird during a vocal cooperative behavior – duet singing**
Susanne Hoffmann, Max Planck Institute for Biological Intelligence
- PS1.007 Bat auditory brainstem response recovery cycles reflect species differences in echolocation call rate**
Grace Capshaw, Johns Hopkins University
- PS1.008 A multiomic approach to the molecular basis of swarming in the African malaria mosquito**
Elizabeth Freeman, UCL
- PS1.009 Modulation of syllable period-selective phonotaxis in female cricket *Acheta domesticus***
Benjamin Navia, Andrews University
- PS1.010 The impact of early auditory exposure on vocalizations in a eusocial mammal**
Sanjana Joshi, Max Planck Institute for Brain Research Frankfurt am Main
- PS1.011 Resonant song recognition and the evolution of acoustic communication in crickets**
Winston Mann, Georg-August-Universität Göttingen

- PS1.012 Inter-individual differences in behavioral and physiological responses under the stressful conditions: quantitative assessment of personality in japanese house bats**
Yuna Nishiuchi, Doshisha University
- PS1.013 Tools for the optical investigation of the naked mole-rat auditory cortex**
Dori Grijseels, Max Planck Institute for Brain Research
- PS1.014 Mother bats respond to own pup's isolation calls with heart rate changes**
Kazuki Yoshino-Hashizawa, Doshisha University
- PS1.015 Crows can volitionally control the number of vocalizations produced**
Diana Liao, University of Tuebingen
- PS1.016 Auditory response to pup calls in California mouse fathers and virgin males**
Katrina Deane, University of California, Riverside
- PS1.017 Behavioural and physiological measures of hearing in a mutant mouse**
Paul Faure, McMaster University
- PS1.018 Hearing capability in actively behaving bats: effects of experimental methods and detection tasks**
Huan Ye, Central China Normal University
- PS1.019 Prevalent harmonic interaction in the bat inferior colliculus**
Zhongdan Cui, Central China Normal University
- PS1.020 The distorted hearing of mosquitoes: the biophysical bases of an unconventional ear**
Chantif Alexandros Alampounti, University College London
- PS1.021 Neural discrimination of vocalization in the auditory cortex of the mexican free-tailed bat**
Viviana Hernandez-Castanon, Virginia Tech
- PS1.022 Cortical representation of social sounds in the naked mole-rat**
Lucía Sanz Vilar, Max Planck Institute for Brain Research
- PS1.023 Does inferior colliculus neurons underlie behavioral auditory discrimination in noise?**
Alexandra Martin, NeuroPSI
- PS1.024 Categorization and laminar organization of spectrotemporal receptive fields in auditory cortex of free-tailed bats**
Alex Faunce, Virginia Tech
- PS1.025 Impact of sub-lethal dosages of the insecticides imidacloprid and flupyradifurone on ascending auditory interneurons in the cricket brain**
Marcelo Christian, Friedrich Schiller University Jena
- PS1.026 Female Cope's gray treefrogs change movement patterns, but not preferences, when facing a more complex discrimination task**
Amir Alayoubi, Colorado State University
- PS1.027 Auditory competition in owl midbrain space maps**
Roland Ferger, Albert Einstein College of Medicine
- PS1.028 Sensing in the swarm: spectro-temporal variation may facilitate self-recognition of echoes for bats flying in dense groups**
Laura Klopper, University of New Hampshire

- PS1.029 Context-dependent vocalisations in laboratory mice**
Shivani Hariharan, Ernst Strüngmann Institute (ESI)
- PS1.030 Neural coding underlying perception of auditory phantom signals**
Shreya Nandi, Pena Lab Albert Einstein College of Medicine
- PS1.031 Social dynamics modulate the patterning of male calling behavior in a South American treefrog**
Mariana Rodriguez-Santiago, Colorado State University
- PS1.032 Distinct activity patterns in auditory cortex underlie echolocation and communication calls in bats**
Susanne Bahl, Ernst-Strüngmann-Institut für Neuroscience
- PS1.033 Separation slang - uncovering separation induced low frequency mouse vocalizations**
Daniel Breslav, Free University Berlin
- PS1.034 Development of sound production in *Danionella cerebrum***
Antonia Groneberg, Charité Universitätsmedizin Berlin
- PS1.035 Representation of sounds in the cortex of naked mole-rats**
Luciana Lopez Jury, Max Planck Institute Brain Research
- PS1.036 Segmenting variable animal behavior with vocal signals and machine learning**
S E Roian Egnor, Janelia Research Campus Howard Hughes Medical Institute
- PS1.037 Three-dimensional hearing in the parasitoid fly, *Ormia ochracea***
Andrew Mason, University of Toronto Scarborough
- PS1.038 Inter-individual differences in linked vocal phenotypes**
Eric Schuppe, UCSF
- PS1.039 Investigating vocal neurons in *Xenopus laevis* and *Silurana tropicalis***
Adara DeNiro, University Of Utah
- PS1.040 Model-based exploration of sensory constraints on grasshopper song recognition and speciation**
Jona Hartling, University of Tübingen
- PS1.041 Masking of signals by both spectrally overlapping and non-overlapping noise impairs vibrational communication in a plant-dwelling insect**
Ales Skorjanc, University of Ljubljana Biotechnical Faculty
- PS1.042 Neural and behavioral evolution in an eavesdropper with a rapidly evolving host**
Norman Lee, St. Olaf College
- PS1.043 Non-imitative vocal production learning in seals**
Diandra Duengen, Max Planck Institute for Psycholinguistics
- PS1.044 A role for distortions in *Drosophila* hearing (?) ... a pilot study.**
Rico Bartels, Carl von Ossietzky University Oldenburg
- PS1.045 Acoustic signals driving species recognition in *Xenopus***
Charlotte Barkan, Williams College
- PS1.046 Acoustic behaviour in bottlenose dolphins during two different target discrimination tasks**
Magnus Wahlberg, University of Southern Denmark

- PS1.047 Host cricket song pattern recognition across populations of *Ormia ochracea***
Jimena Dominguez, St. Olaf College

ELECTROSENSORY SYSTEM

- PS1.048 Evolution of electric organ discharge (EOD) in African weakly electric fishes: genomics and behavioral ecology of a magic trait**
Ralph Tiedemann, University of Potsdam
- PS1.049 Performance and motor behaviour of *Gnathonemus petersii* during object detection and size discrimination**
Maria Paula Arteaga Avendano, Universität Bielefeld
- PS1.050 Socializing with fish: an interactive fish robot reveals the principles of communication in groups of weakly electric fish**
Gerhard von der Emde, Universität Bonn
- PS1.051 Strategies for context-specific learning in weakly electric fish**
Sarah Nicola Jung, Universität Bielefeld
- PS1.052 Characterising a new class of aerial electroreceptor in bees**
Beth Harris, University of Bristol Bristol Life Sciences Building
- PS1.053 Population-level spatial coding of conspecific electrosensory signals in the hindbrain of knifefish**
Gary Marsat, West Virginia University
- PS1.054 Specialized signals for conspecific electrolocation in weakly electric fish**
Livio Oboti, Humboldt-Universität zu Berlin
- PS1.055 Electrocommunication signals of the brown ghost knifefish might indicate submission during competitions – deep learning applied to animal behavior**
Patrick Weygoldt, University of Tübingen
- PS1.056 Scaling rules in a cerebellum-like circuit in a weakly electric mormyrid fish**
Michael Genečin, Columbia University Zuckerman Mind Brain Behavior Institute
- PS1.057 Burst firing generates invariant coding of natural electrocommunication stimuli**
Amin Akhshi, McGill University
- PS1.058 The effect of urethane and MS-222 anesthesia on the electric organ discharge of the weakly electric fish *Apteronotus leptorhynchus***
Gunther Zupanc, Northeastern University 405 Mugar Life Sciences
- PS1.059 Extracellular potassium concentration is a major determinant of the firing frequency in the pacemaker nucleus of a high-frequency electric fish, *Apteronotus leptorhynchus***
Masashi Kawasaki, University of Virginia

EVOLUTION AND DEVELOPMENT

- PS1.060 The crown jewel of stress protection? Investigating the role of the major royal jelly proteins in stress protection**
Stephanie Hathaway, Purdue University
- PS1.061 Toward understanding the molecular basis of behavioral evolution in Hymenoptera: Insight from molecular developmental analysis of mushroom bodies in the honey bee brain**
Shuichi Kamata, The University of Tokyo

- PS1.062 Modification of motor cortical circuitry underlies the evolution of behavioral novelty in the singing mouse**
Emily Isko, Cold Spring Harbor Laboratory
- PS1.063 Ostracod neuroanatomy reveals ancient origin of mushroom bodies and central complex in Pancrustacea**
Alexandra Gurgis, Case Western Reserve University
- PS1.064 The co-evolution of male song and female song preference in cricket**
Daesung Cho, European Neuroscience Institute
- PS1.065 High vocal flexibility impedes the evolutionary adaptation of bat echolocation signals**
Nina Ma, Central China Normal University
- PS1.066 Males in more complex social groups have larger brains and greater social competence: evidence from wild cichlid fish in Lake Tanganyika**
Bin Ma, Max Planck Institute of Animal Behavior
- PS1.067 An unusual birthing behavior protects the progeny of the arsenic-resistant nematode *Tokorhabditis tufae***
James Lee, Rockefeller University
- PS1.068 Early postnatal development of vocal flexibility in the echolocating bat**
Aoqiang Li, Central China Normal University
- PS1.069 Mechanisms of *Drosophila* escape circuit evolution**
Cynthia Chai, Columbia University
- PS1.070 Locomotor maturation during early development in a small vertebrate**
Monica Coraggioso, Sorbonne University
- PS1.071 Is the *Drosophila* DRA an evolutionary novelty of higher Diptera shaped by molecular changes in homothorax locus?**
Heidi Roth, Freie Universität Berlin
- PS1.072 Cell types and circuits underlying cuttlefish camouflage**
Simone Rencken, Max Planck Institute for Brain Research
- PS1.073 The development of synaptic partner choice and a robust representation of skylight polarization in the fly optic lobes**
Sara Saab, Freie Universität Berlin
- PS1.074 The development of the representation of skylight polarization in the central brain of *Drosophila***
Baris Mandaci, Freie Universität Berlin
- PS1.075 Context-dependent patterning of *Drosophila* courtship song mirrors phylogenetic relationships**
Dawn J Tan, European Neuroscience Institute
- PS1.076 A trade-off between sensory and processing capabilities in the midwater**
Karen Osborn, Smithsonian Institution National Museum of Natural History
- PS1.077 *Danionella dracula* telencephalon is a mosaic of larval, juvenile and adult characters**
Jonathan Perelmuter, Cornell University

- PS1.078 Diversity and evolution of neuronal cell types in cephalopods**
David Hain, Max Planck Institute for Brain Research
- PS1.079 Evolution of olfactory cell types and receptors across mosquito antennae**
Vitor L. dos Anjos, Princeton University
- PS1.080 Visual ecology and feeding behavior drive brain size expansion across hawk and silk moths**
R Keating Godfrey, Florida International University
- PS1.081 Towards the anatomical blueprint of the insect brain – brain morphology across the insect phylogenetic tree**
Atticus Pinzon-Rodríguez, Lund University
- PS1.082 Rapid evolution of sociality is paralleled by changes in the activation pattern of the brain social decision-making network in zebrafish**
Magda Teles, Fundação Calouste Gulbenkian – Instituto universitário
- PS1.083 Development and structural dependence on binocularity of “innate” escaping responses in a diurnal rodents, the *Octodon degus***
Alfonso Deichler, Laboratory of Neurobiology Faculty of Science Universidad de Chile
- METABOLISM, BIOLOGICAL RHYTHMS AND HOMEOSTASIS**
- PS1.084 RNA expression analysis of individual accessory medulla neurons of *Rhyarobia maderae* using single nucleus RNA sequencing**
Huleg Zolmon, Universität Kassel
- PS1.085 Circadian and seasonal physiology of glassfrogs in the light of climate change**
Mila Pamplona Barbosa, Stanford University
- PS1.086 Peptidergic and aminergic modulation of insulin-producing cells in *Drosophila***
Martina Held, University of Würzburg Theodor-Boveri-Institute, Biocenter
- PS1.087 Nutritional state-dependent modulation of insulin-producing cells in *Drosophila***
Rituja Bisen, University of Würzburg
- PS1.088 Electrophysiological characterization and computational modeling of insulin-producing cells in *Drosophila***
Federico Cascino Milani, University of Würzburg
- PS1.089 Remote chemical command from the female to male clock induces and synchronises insect circadian rhythms**
Abhishek Chatterjee, iEES-Paris, INRAE
- PS1.090 Stress responsiveness in laboratory-bred and wild (urban and rural trapped) *Rattus norvegicus*: consideration of adaptation and habitat influences**
Isabel DiLandro, University of Richmond
- PS1.091 The neuronal membrane as circadian posttranslational feedback loop oscillator**
Anna C. Schneider, University of Kassel
- PS1.092 The potential impact of environmental complexity on cerebrovasculature in wild and laboratory *R. norvegicus***
Paeen Luby, University of Richmond

- PS1.093 Swamp minds: Weakly electric fish *Petrocephalus degeni* balance brain cell proliferation and apoptosis in hypoxia**
Marie-Luise Vollbrecht, Humboldt-Universität zu Berlin
- PS1.094 Molecular mechanisms mediating the effects of social cues on biological clocks**
Deborah Lutterschmidt, University of California, Irvine
- PS1.095 Regulation of appetite by dietary macronutrients: unraveling the host-microbiome connection**
Jing Wang, University of California San Diego
- PS1.096 Local sleep in songbirds: Different simultaneous sleep stages in zebra finches**
Hamed Yeganegi, Max Planck Institute for Biological Intelligence

METHODS AND EDUCATION

- PS1.097 Real-time analysis of large-scale neuronal imaging enables closed-loop investigation of neural dynamics**
Yufan Wang, Chinese Academy of Sciences CEBSIT
- PS1.098 Robofish: A novel robotic system for understanding weakly electric fish dynamics**
Emily Wong, Freie Universität Berlin
- PS1.099 A practical course, designed by students, using backyard brains equipment**
Linnea van Griethuijsen, Maastricht University
- PS1.100 CRISPR/cas9 mediated targeted genome editing in the parthenogenetic stick insect *Medauroidea extradentata***
Elina Dirksen, University of Cologne
- PS1.101 Novel methods for the study of insect social behavior**
Lorenz Mammen, Cornell University
- PS1.102 Clearing the path for molecular imaging in the cichlid brain**
Alessandro Dorigo, MPI für biologische Intelligenz
- PS1.103 Do it yourself: creating custom-made 3D brain surface models and brain matrices for sectioning using photogrammetry and three-dimensional printing technology**
Sophie Holtz, Freie Universität Berlin
- PS1.104 Classroom assessment of crescent loom, a simulation for teaching neural circuits and behavior**
Elizabeth Leininger, St. Mary's College of Maryland
- PS1.105 Light microscopy-based dense connectomics in invertebrates**
Joshua Lillvis, Janelia Research Campus/HHMI
- PS1.106 Transient and persistent fear states in *Drosophila melanogaster***
Matheus Farias, Champalimaud Centre for the Unknown
- PS1.107 Longitudinal functional brain imaging in juvenile zebrafish and adult *Danionella***
Alex Simon Lagurin, Max Planck Institute for Neurobiology of Behavior – caesar
- PS1.108 Measuring raptor prey-capture behavior during natural flight**
Katrin Junker, Max Planck Institute for Neurobiology of Behavior - caesar

PS1.109 From the animal's point view: A head-mounted 4pi camera approach for accurate tracking of position, attitude and behavior in natural environments*Paul Stahr, MPI for Neurobiology of Behavior***PS1.110 Recording electrical activity from the brain of behaving octopus***Andreas Neef, University of Göttingen***MOTOR SYSTEMS, SENSORIMOTOR INTEGRATION, AND BEHAVIOR****PS1.111 Sensorimotor calibration in optic flow processing circuits***Claire Rusch, Champalimaud Foundation***PS1.112 Electrophysiological differences between multifunctional and behaviorally specialized turtle spinal neurons involved in swimming, scratching, and flexion reflex***Ari Berkowitz, University of Oklahoma***PS1.113 Anatomical exploration of motoneurons driving woodpecker drumming behavior***Nicole Moody, Brown University***PS1.114 Flies tune the sensitivity of their multifunctional gyroscope***Bradley Dickerson, Princeton University***PS1.115 Behavioral and neural correlates of a supernormal song stimulus in nightingales***Giacomo Costalunga, MPI for Biological Intelligence***PS1.116 Descending control and regulation of spontaneous flight turns in *Drosophila****Michael Dickinson, California Institute of Technology Pasadena, CA 91125***PS1.117 Hummingbird hawkmoths display lateralised visuo-motor control of the proboscis during pattern inspection***Lochlan Walsh, University of Konstanz***PS1.118 Obstacle avoidance in *Locusta migratoria*: furthering understanding through combined techniques in electrophysiology, behavioral recording, and stimulus generation***Erik Olson, University of Saskatchewan***PS1.119 Recovery of locomotion after injury: Expression of voltage-gated ion channels and biogenic-amine receptors in the leech nerve cord after removal of descending inputs***David Schulz, University of Missouri-Columbia***PS1.120 Twitch kinetics set neuromuscular limits on the performance of territorial drums in downy woodpeckers (*Dryobates pubescens*)***Nicholas Antonson, Brown University***PS1.121 Application of system identification to model bat echolocation parameter control during prey tracking***Michael Wilkinson, Johns Hopkins University***PS1.122 Signal transmission among leech ganglia***Graciela Kearney, IFIBYNE UBA-CONICET***PS1.123 The neurobiology of visually-guided ambush behaviour in south american horned frog***Pei Hsuan Wu, University of British Columbia***PS1.124 Adaptive flight strategies for challenging light environments in the nocturnal hawkmoth *Deilephila elpenor****Andrea Gonsek, Konstanz University*

- PS1.125 Descending control of flight saccades in *Drosophila***
Bettina Schnell, MPI for Neurobiology of Behavior
- PS1.126 Effects of sublethal dose of pesticides on visually guided behaviour of european honeybees (*Apis mellifera*)**
Basirat Liadi-Azeez, University of Saskatchewan
- PS1.127 Role of behavioral rules and feedback cues in shaping social interactions**
Sarath Ravindran Nair, European Neuroscience Institute Goettingen
- PS1.128 Action, valence, dopamine- *Drosophila* as a study case**
Fatima Amin, Leibniz Institute for Neurobiology
- PS1.129 Spatiotemporal pulsatile floating pattern analysis for cyborg jellyfish control**
Dai Owaki, Tohoku University
- PS1.130 Two-photon imaging in freely singing birds**
Shouwen Ma, MPI For Biological Intelligence
- PS1.131 Descending pathways that control the initiation, speed, and halting of locomotion in *Drosophila***
Chris Dallmann, University of Würzburg
- PS1.132 Consistency vs. flexibility of motor circuits: Convergent neuropeptide comodulation pulls the stomatogastric pyloric circuit towards activity patterns that are independent of modulator identity**
Nelly Daur, New Jersey Institute of Technology
- PS1.133 Avoid or attack? Context-dependent responses to noxious stimuli in a model insect**
Barry Trimmer, Tufts University
- PS1.134 Investigating satiety-dependent decision making with quantitative behavioral analysis and molecular neuroanatomy in the a nudibranch specialist-predator**
Kate Otter, University of Massachusetts Amherst
- PS1.135 The role of two retinal regions in pecking of pigeons: A visual occlusion experiment**
Kenta Wada, Keio University
- PS1.136 Investigating motor-sensory signaling during *Drosophila* retinal movements**
Tjalda Falt, MPI for Biological Intelligence
- PS1.137 Deciphering collective motion: The role of visual attributes in locust decision-making**
Amir Ayali, Tel Aviv University
- PS1.138 Variation and adaptiveness of locomotion in visually induced turning behaviour**
Merit Meschenmoser, Bielefeld University
- PS1.139 Overlapping muscles drive multimodal courtship signals in *Drosophila***
Melanie Stenger, Georg-August-University Göttingen
- PS1.140 Analyzing individual locomotion behavior in *Drosophila* larvae**
Marit Praetz, AG Klämbt Neurobiology University of Münster
- PS1.141 Load feedback in fruit fly walking: analysis of sensory projections and role in generating leg stepping and motor flexibility**
Anna Pierzchlińska, University of Cologne

- PS1.142 Kinematic synergies of leg stepping in straight-walking fruit flies, *Drosophila melanogaster***
Moritz Hausteine, University of Cologne
- PS1.143 Multisensory integration of aversive visual and auditory cues in *Aedes aegypti* mosquitoes**
Michael Rauscher, Case Western Reserve University
- PS1.144 Parallel sensorimotor pathways control landing in *Drosophila***
Sander Liessem, Julius-Maximilians-Universität Würzburg Theodor-Boveri-Institute Ache Lab
- PS1.145 Analyzing the odor source localization behavior of adult male silkworm, *Bombyx mori*, in response to hierarchical environmental complexity**
Shunsuke Shigaki, National Institute of Informatics
- PS1.146 Marmoset monkeys use different avoidance strategies to cope with ambient noise during vocal behavior**
Julia Löschner, University of Tübingen, Medical Center
- PS1.147 Vocalization-correlated neural responses in the marmoset brainstem**
Elena Cavani, University of Tübingen, Medical Center
- PS1.148 What came first, the flicker or the firing rate? Links between salient stimulus features and neural encoding in predatory Asilidae flies**
David Munkvold, University of Minnesota
- PS1.149 Functionality of the regenerated nervous system**
Carina Seidl, Institute of Molecular Biotechnology
- PS1.150 Temperature resilience of the pyloric and gastric neuromuscular systems**
Kathleen Jacquerie, Brandeis University Brandeis University
- PS1.151 Optogenetic antennal stimulation drives haltere movement in *Drosophila***
Amy Streets, Case Western Reserve University
- PS1.152 Exploring the role of a premotor cell type for active sensor control in *Drosophila***
Olivia Nunn, Vanderbilt University
- PS1.153 Experience dependent modulation of collective behavior in larval zebrafish**
Roy Harpaz, Harvard University
- PS1.154 Comparative physiology of the mosquito and fruit fly wing motors**
Sam Whitehead, Caltech
- PS1.155 Developmental differentiation of song-related neural activity in the basal ganglia of bengalese finches**
Yuka Suzuki, The University of Tokyo
- PS1.156 Cortical representation of facial features and body posture in freely moving rats**
Jerneja Rudolf, NTNU
- PS1.157 Sleep disruption improves behavioral performance in zebrafish larvae**
Hanna Zwaka, Leibniz Insitute for Neurobiology
- PS1.158 Shared neural substrates for seasonal and evolutionary shifts in sensorimotor integration**
Martin Jarzyna, Washington University in St. Louis

- PS1.159 Sticking the landing: Unraveling mechanisms of proprioceptive feedback in flying insects**
Sweta Agrawal, Virginia Tech University
- PS1.160 Intrinsic connectivity of a multipurpose central pacemaker nucleus in *Gymnotus omarorum***
Virginia Comas, Facultad de Medicina, UdeLaR
- PS1.161 Understanding the impact of early microexon misregulation on zebrafish sleep/wake behaviour**
Tahnee Mackensen, Centre for Genomic Regulation
- PS1.162 Male and female syringeal muscles exhibit superfast shortening velocities in zebra finches**
Nicholas Gladman, University of Southern Denmark
- PS1.163 Vocal exercise is necessary to maintain respiratory muscle performance in a songbird**
Lucas Dal'Ava, University of Southern Denmark
- PS1.164 Visuomotor control in virtually swimming *Danionella* larvae**
Leonardo Demarchi, Sorbonne University

OLFACTION, TASTE AND CHEMICAL SENSING

- PS1.165 The taste of humans and nectar: gustation in the Asian tiger mosquito**
Lisa Baik, Yale University
- PS1.166 Day/night cycles regulate pheromone acuity to gate rhythmic courtship behavior**
Chih-Ying Su, University of California, San Diego
- PS1.167 Harnessing the locust olfactory system for the detection of endometriosis**
Simon Sanchez, Michigan State University
- PS1.168 Non-canonical encoding of human odor in mosquitoes**
Florencia Fernandez-Chiappe, Center for Systems Neuroscience, Department of Biology, Boston University
- PS1.169 Evolution of odorant receptors in a blood-feeding fly**
Andrea Adden, The Francis Crick Institute
- PS1.170 Olfactory control of visual preferences in the mosquito, *Aedes aegypti***
Jeff Riffell, University of Washington
- PS1.171 Decoding neurogenetics of olfactory specialization in blind cavefish**
Rose Tatarsky, Paris-Saclay Institute of Neuroscience
- PS1.172 Ant aggregation pheromones: From social behavior to neural coding**
Matteo Rossi, The Rockefeller University
- PS1.173 Employing the honeybee olfactory system for detection of volatile human lung cancer biomarkers**
Summer McLane-Svoboda, Michigan State University
- PS1.174 Pleiotropy drives the functional coupling of the production and perception of mating signals**
Yehuda Ben-Shahar, Washington University in St. Louis

- PS1.175 Towards a partial molecular atlas for the mosquito olfactory system**
Timothy W. Schwanitz, Princeton University
- PS1.176 Identification of core genes of clock-controlled pheromone transduction in *Manduca sexta***
Yajun Chang, University of Kassel
- PS1.177 Ancestral complexity and constrained diversification of the and olfactory system**
Antoine Couto, CNRS University of Paris-Saclay IDEEV
- PS1.178 Synergistic olfactory processing for social plasticity in desert locusts**
Yannick Günzel, University of Konstanz
- PS1.179 Mechanism of olfactory caregiver recognition by social tadpoles**
Najva Akbari, Stanford University
- PS1.180 Untangling rhythms: Interactions at different timescales in olfactory receptor neurons in nocturnal insects**
Aditi Vijayan, University of Kassel
- PS1.181 Layers of complexity in the sensory systems of the nudibranch mollusc *Berghia stephanieae***
Cheyenne Tait, University of Massachusetts Amherst
- PS1.182 A model investigation of synaptic transmission tuned via the unc13 protein.**
Magdalena Springer, University of Cologne
- PS1.183 Circuit evolution mediating the environmental impact on *Drosophila* courtship**
Philipp Brand, Rockefeller University
- PS1.184 A comparative look at chemosensory brain regions across cephalopods with different lifestyles**
Heather Rhodes, Denison University
- PS1.185 Investigating the co-option of a pheromone receptor as a host odor sensor in blood-feeding flies**
Angela Lao, The Francis Crick Institute
- PS1.186 Non-canonical olfaction in disease-vector mosquitoes**
Meg Younger, Boston University
- PS1.187 Characterisation of a hunger state-dependant switch in olfactory response behavior**
Hari Narayanan, University of Konstanz
- PS1.188 A molecular approach to understanding the neuronal responses and interactions in maxillary palps of *Aedes aegypti***
Karthikeyan Kannan, Indian Institute of Technology Kanpur
- PS1.189 The sobee project – unraveling the olfactory neuroethology of social immunity in honey bees**
Valerie Kuklovsky, University of Konstanz
- PS1.190 Gustatory sensitivity to amino acids in bumblebees**
Sergio Rossoni, University of Sussex
- PS1.191 When predation becomes escape: quantify mosquito foraging to understand repellency**
Jacopo Razzauti, Rockefeller University

- PS1.192 Genetic and neural basis of attraction of gravid *Aedes aegypti* to African Bermuda hay infusions**
Margot Wohl, Johns Hopkins University
- PS1.193 Do bumblebees have preferred floral smells?**
Carolina Gomez, Durham University
- PS1.194 Experience-dependent plasticity of a highly specific olfactory circuit in *Drosophila melanogaster***
Benjamin Fabian, Max Planck Institute f. Chemical Ecology
- PS1.195 Modulation of olfaction by multi-sensory integration and learning in honeybees**
Athil Althaf Aliyam Veetil Zynudheen, Bielefeld University
- PS1.196 State-dependent modulation of CO₂ responses in the yellow fever mosquito *Aedes aegypti***
Diego Giraldo, Johns Hopkins University
- PS1.197 Odor generalisation versus discrimination driven by a connectivity bias for different ethological groups of odors in the *Drosophila* mushroom body**
Chi Wai Chan, Lehrstuhl für Entwicklungsbiologie RWTH Aachen University
- PS1.198 Investigating brain anatomy across several bumblebee species, native to north-east England**
Jorn Oppersma, Durham University
- PS1.199 Olfactory aversive conditioning and mixture perception in *Drosophila melanogaster***
Lautaro Alejandro Duarte, IFIBYNE, UBA-CONICET
- PS1.200 Behavioral, physiological and computational characterization of olfactory sensory adaptation**
Federico Gascue, IFIByNE University of Buenos Aires CONICET
- PS1.201 Diet, sociality, and taste evolution in ants**
Emily Smith, Boston University
- PS1.202 Insight into the olfactory system of the migratory locust, *Locusta migratoria*: An anatomical and cellular study**
Eleftherios Dimitriou, Max Plank Institute for Chemical Ecology
- PS1.203 Evolution of the olfactory circuits driving human host preference in mosquitoes**
Lukas Weiss, Princeton University
- PS1.204 Ephaptic coupling between olfactory receptor neurons is sensitive to relative stimulus timing: A potential mechanism for odor source discrimination**
Georg Raiser, Champalimaud Foundation
- PS.205 An olfactory social language in the naked mole-rat?**
Mohammed Khallaf, Max Delbrück Center MDC for Molecular Medicine
- PS.206 Is age- and mating-dependent modulation of floral seeking in mosquitoes regulated by an odorant receptor switch?**
Sukritha Nalikkaramal, SLU, Alnarp Unit of Chemical Ecology
- PS1.207 Sense organs of *Drosophila* larvae**
Vincent Richter, Leipzig University

OTHER SENSORY SYSTEMS (MECHANOSENSATION, ANEMOSENSATION, THERMORECEPTION, HYGRORECEPTION AND NOCICEPTION)

- PS1.208 Wings to waves: The remarkable hearing of *Anopheles gambiae***
Marcos Georgiades, University College London
- PS1.209 Analogous computational principles of visual and mechanical looming threats?**
Paul Clemençon, Insect Research Biology Institute
- PS1.210 Navigating complexity: Understanding rheotaxis in *Ciona* larvae**
Oleg Tolstenkov, Michael Sars Center University of Bergen
- PS1.211 Mechanosensory encoding by Johnston's organs in the antennae of hawkmoths**
Chinmayee Mukunda, National Centre for Biological Sciences
- PS1.212 Seeking amongst the clusters: a comparative transcriptomic study of the hygro- and thermosensory neurons in *D. melanogaster* and *Aedes aegypti***
Kristina Corthals, Lund University
- PS1.213 Motion detection in the infrared realm: How ball pythons respond to target motion in predator-prey scenarios**
Santiago Rodriguez Castro, Michigan State University
- PS1.214 Mechanosensory representation of wing deformations**
Alexandra Yarger, Imperial College London
- PS1.215 The anterior lateral line contributes to prey detection in larval zebrafish**
Qing Wang, Max Planck Institute for Biological Intelligence
- PS1.216 Life with long appendages: functional, kinetic and morphological adaptations in house centipedes**
Iulia Barutia, Max Plank Institute for Chemical Ecology Jena IMPRS
- PS1.217 How flies and vector mosquitoes sense heat and humidity (and you)**
Paul Garrity, Brandeis University
- PS1.218 Myosin II actively regulates *Drosophila* proprioceptors**
Chonglin Guan, Carl von Ossietzky University Oldenburg
- PS1.219 Magnetoreception in *Cataglyphis* ants**
Pauline Fleischmann, Carl von Ossietzky Universität Oldenburg

VISION AND PHOTORECEPTION

- PS1.220 Implications of quantitative visual modelling**
Cedric van den Berg, University of Bristol
- PS1.221 Why the comb jellyfish *Mnemiopsis leidyi* flashes at night**
Anders Garm, University of Copenhagen
- PS1.222 An AAV based strategy towards functional 2P imaging in avian retina**
Pranav Kumar Seth, Baden lab School of life sciences University of Sussex
- PS1.223 Revealing the hierarchical organization of the cephalopod optic lobe**
Konstantinos Tsaridis, Okinawa Institute of Science and Technology
- PS1.224 Influence of temperature on motion processing in the central brain of bumblebees**
Bianca Jaske, University of Würzburg Biocenter

- PS1.225 Lamina neurons build the basis for dynamic processing in the hawkmoth visual system**
Ronja Bigge, University of Konstanz
- PS1.226 Hoepel 1 is a potential rhodopsin interacting protein required for maintenance of *Drosophila* photoreceptor cells**
Nilofar Fezy, Universität Hohenheim
- PS1.227 Ancestral cones differentially drive and regulate retinal motion vision circuits**
Chiara Fornetto, University of Sussex
- PS1.228 Optic flow neurons in the pretectum have different direction tuning at very fast speeds**
Doug Altshuler, University of British Columbia
- PS1.229 Unravelling the transformation of skylight polarization signals into a neural compass in the bumblebee brain**
Janka Kluge, Lund University
- PS1.230 Visual physiology of two sympatric wasps: Survival-adapted vision**
Luis Robledo Ospina, Macquarie University Faculty of Science and Engineering
- PS1.231 A competitive disinhibitory network for robust optic flow processing in *Drosophila***
Mert Erginkaya, Champalimaud Research Champalimaud Foundation Lisbon, Portugal
- PS1.232 Pursuit characteristics and sensory feedback shape evasive strategies in larval zebrafish**
Leandro Aluisio Scholz, The University of Queensland
- PS1.233 Neural substrates of visuo-behavioural changes during frog metamorphosis**
Michael Forsthofer, University of Sussex School of Life Sciences JMS Store
- PS1.234 Camouflaging motion in the hunting display of broadclub cuttlefish**
Matteo Santon, University of Bristol Ecology of Vision group
- PS1.235 Animacy perception in the common cuttlefish, *Sepia officinalis***
Bastien Lemaire, University of Caen Normandy
- PS1.236 The impact of brain injury and regeneration on visually guided behaviors in the axolotl (*A. mexicanum*)**
Simone Horenkamp, Institute of Molecular Biotechnology
- PS1.237 "Retina-like" functional and cellular complexity in the zebrafish pineal gland**
Tessa Herzog, University of Sussex
- PS1.238 Motion salience and the evolution of alerting displays in *Habronattus* jumping spiders**
Abhinava Jagan Madabhushi, University of Cincinnati
- PS1.239 Amphibious compound eyes: shifts in eye morphology and function in *Belostoma flumineum***
Tanner Mierow, University of Tulsa
- PS1.240 Visual responses and adaptation in looming sensitive descending neurons**
Katja Sporar Klinge, Flinders University, CMPH
- PS1.241 Polarisation and luminance contrast are processed in the same way by escaping fiddler crabs**
Jan Hemmi, University of Western Australia

- PS1.242 Species specific light reactions of arctic *Calanus* copepods revealed by AI assisted tracking**
Martta Viljanen, NTNU Trondheim Biological station
- PS1.243 Glowing and seeing red: Molecular evolution of bioluminescence in dragon fishes**
Vit Kaufman, FISHEVO Group Department of Zoology Charles University
- PS1.244 I see you in green: the story behind RH2 opsin gene duplications in european cypriniform fishes from family Leuciscidae**
Veronika Truhlarova, Faculty of Science, Charles University
- PS1.245 Shark vision – what does the retina tell the brain?**
George Kafetzis, University of Sussex Brighton United Kingdom
- PS1.246 Diversification of outer retinal feature channels through bipolar cells in larval zebrafish**
Simen Bruoygard, University of Sussex
- PS1.247 Parallel pathways for visual and olfactory information in the mushroom bodies of the swallowtail butterfly brain**
Naomi Takahashi, RCIES, SOKENDAI
- PS1.248 Insect retinal movements in the context of visual ecology and evolution**
Pavel Kviatko, MPI for Biological Intelligence
- PS1.249 Investigating the role of double cones in the frog retina**
Thomas Stark, Baden Lab University of Sussex
- PS1.250 Specifics of optic flow perception in harbor seals (*Phoca vitulina*)**
Laura-Marie Sandow, University of Rostock
- PS1.251 Evolution of vision in sturgeons: opsin genes, photoreceptors and how to see without rod cells in the retina**
Prokop Kosatko, Faculty of Science Charles University Albertov
- PS1.252 Mechanism shaping the sensitivity of red photoreceptors in jewel beetles (Buprestidae)**
Amanda Franklin, University of Melbourne
- PS1.253 Vision in motion: unravelling the visual capabilities of australian strobe ants, *Opisthopsis* spp.**
Giovanni Ramon-Cabrera, Macquarie University
- PS1.254 A versatile multi-colour spatial visual stimulus projector for the analysis of colour processing**
Julia Maria Strauß, Johannes Gutenberg Universität Mainz
- PS1.255 Regionalization and spectral tuning of an opponent photoreceptor class in the retina of *Heliconius melpomene*, a nymphalid butterfly**
Marko Ilić, Biotechnical Faculty University of Ljubljana
- PS1.256 The visual systems of crab spiders and running crab spiders: convergent or conserved?**
Atal Pande, Museum für Naturkunde Berlin
- PS1.257 How to keep an arthropod eye focused during rapid growth**
Elke Buschbeck, University of Cincinnati

POSTER SESSION II

Note: The poster board numbers (1 – 260) will remain the same throughout the entire meeting. Your board number is the number after the dot, so PS2.057 is poster board 57.

You are welcome to hang up your poster starting **Wednesday, July 31 8:00 AM**. Please remove your poster by Friday 6 PM. This guarantees that the posters of both sessions are accessible for roughly an equal amount of time during the conference.

During the poster session, please be at your poster, 15:00 – 16:30 for even poster numbers and 16:30 – 18:00 for odd poster numbers.

LEARNING, MEMORY AND COGNITION

- PS2.001 Cognitive abilities of barn owls: what we know and what we don't know**
Hermann Wagner, RWTH Aachen University
- PS2.002 Size-selective mortality alters brain-size, cognitive executive functions and innovative behavior in zebrafish, *Danio rerio***
Tamal Roy, IGB Berlin
- PS2.003 Neuronal modulation after associative and non- associative learning on antennal lobe and mushroom body output level**
Cansu Arican, Institute of Zoology University of Cologne
- PS2.004 Evolution of reward perception and learned behavior in *Drosophila***
Consuelo Perez Sanchez, Stowers Institute for Medical Research
- PS2.005 Pattern recognition in insects: Which features do foraging hawkmoths rely on to detect flower patterns?**
Anupama Nayak Manel, Universität Konstanz
- PS2.006 Hippocampal coding in a social group of wild bats: representation of identity, sex, hierarchy, affiliation and interactions**
Saikat Ray, Weizmann Institute of Science
- PS2.007 Numbers matters: Honeybees preferentially use numerical cues in an ecologically relevant task of quantity discrimination.**
Elena Kerjean, University of Toulouse III
- PS2.008 Analysis of mushroom body synaptic circuits in the adult *Apis mellifera* brain**
Andrea Rafaela Nicolaidou, Julius-Maximilians-Universität (JMU) Biocenter
- PS2.009 Acoustic wayfinding in flight: probing bat's ability to recall spatial locations using learned auditory cues**
Jared Jaroszewski, Johns Hopkins University
- PS2.010 Humans forage in a classic reinforcement learning task**
Meriam Zid, Université de Montréal
- PS2.011 Involvement of the teleost inferior lobe in a problem-solving object manipulation task**
Pierre Estienne, Paris Saclay Institute of Neuroscience Paris-Saclay University CNRS
- PS2.012 Learning from occurrence and termination of reinforcement in *Drosophila***
Juliane Thoener, Leibniz-Institut für Neurobiologie Magdeburg

- PS2.013 Assessing the effect of ultradian light exposure on learning and memory in adult female mice**
Shubham Rathore, NIMH/NIH
- PS2.014 How experience modulates performance across taxa: A comparative study on visual perceptual learning in bees and humans**
Samantha Béchet, Research Center on Animal Cognition Center for Integrative Biology CNRS - Université Paul Sabatier
- PS2.015 Uncovering associative learning-induced changes in locust olfaction through in-vivo neural recordings and machine learning.**
Autumn McLane-Svoboda, Michigan State University
- PS2.016 Adaptive innate preferences of solitary generalists and its flexibility**
Aditi Mishra, National Centre for Biological Sciences
- PS2.017 Effects of sleep-like quiescent state on memory consolidation in the pond snail *Lymnaea***
Kengo Namiki, Waseda University
- PS2.018 From connectomic to behavioral complexity in larval *Drosophila*?**
Edanur Sen, Leibniz Institute for Neurobiology (LIN)
- PS2.019 Brain that changes itself: Changes in the brain and behavior along the bumblebee queen life cycle**
Guy Zer Eshel, Tel Aviv University
- PS2.020 Constructing quantitative ethograms of walking bumblebees during free exploration to test for effects of common pesticides**
Ana Zadel, Lund University
- PS2.021 Flexible use of colour and social cues in the giant honeybee, *Apis dorsata***
Hema Somanathan, Indian Institute of Science Education and Research IISER TVM
- PS2.022 Cuing effects on praying mantis strikes are long-lasting and disparity dependent**
Théo Robert, Newcastle University
- PS2.023 Neural mechanisms of learned sociability in *Drosophila***
Victor Lobato Rios, EPFL
- PS2.024 Mouse lockbox: A sequential mechanical decision-making task to investigate complex mouse behavior**
Marcus Boon, Technische Universität Berlin
- PS2.025 Symmetry concept formation in a california sea lion (*Zalophus californianus*)**
Yvonne Krüger, University of Rostock
- PS2.026 Know thy neighbor: The neural basis of reciprocity in a highly social cichlid**
Emily Lessig, University of Texas at Austin
- PS2.027 Uncovering the neuro-ethological components of emotions in honeybees**
Catherine Macri, Institut de biologie Paris seine Sorbonne université
- PS2.028 Vocal production in the Egyptian fruit-bat**
Julie Elie, University of California, Berkeley
- PS2.029 Statistical learning in honey bee**
Marco Paoli, Laboratoire Neurosciences Paris Seine Institute de Biologie Paris Seine

- PS2.030 Learning your instincts: Dissecting nest-building behavior in *Lamprologus ocellatus*, a shell-dwelling cichlid from Lake Tanganyika**
Swantje Grätsch, Max Planck Institute for Biological Intelligence
- PS2.031 Knockout in zebrafish reveals the role of glucocorticoid receptor in lateralisation and learning**
Eleonora Rovegno, University of Ferrara
- PS2.032 Behavioral state influences encoding mechanisms of color and odor integration in a model insect, the bumblebee *Bombus impatiens***
Jordanna Sprayberry, Muhlenberg College
- PS2.033 Statistical learning and chunking of complex visual scenes in honeybees (*Apis mellifera*)**
Laure Tosatto, Monash University
- PS2.034 *Saccopteryx bilineata*: A promising candidate for exploring neuronal substrates of mammalian vocal learning**
Ahana Fernandez, Museum of Natural History Berlin
- PS2.035 Learning through sight and smell: correlates of bimodal sensory integration in *Drosophila***
Devasena Thiagarajan, MaxPlanck Institute for Chemical Ecology
- PS2.036 Individual strategies in a challenging ordinal learning and rotation task**
Scarlett Howard, Monash University
- PS2.037 Visual rule based cognitive flexibility in bumblebees**
Mai Morimoto, Queen Mary University of London
- PS2.038 A working memory assay in larval zebrafish**
Antonio Lucas Martins, Champalimaud Foundation
- PS2.039 Decoy effect in social decision-making in zebrafish (*Danio rerio*)**
Abhishek Singh, Ashoka University India
- PS2.040 The cellular and functional organisation of the dopaminergic teaching signal in *Drosophila* larvae**
Andreas Thum, Leipzig University
- PS2.041 Effect of the temporal sequence of stimuli on olfactory associative learning in *Apis mellifera***
Marcos Rafael Sorrentino, IFIBYNE
- PS2.042 How can the octopus vertical lobe help in revealing fundamental principles of associative learning networks?**
Binyamin Hochner, Hebrew University
- PS2.043 Behavioural flexibility during waiting periods**
Ioannis Pisokas, Janelia Research Campus
- PS2.044 Investigating emotion-like behavior in cuttlefish *Sepia pharaonis***
JUN-YA LAI, National Tsing Hua University
- PS2.045 Behavioral consequences of mushroom body medial lobe malformation in *Drosophila melanogaster***
Anne Sohie Oepen, University of Cologne

MOTOR SYSTEMS, SENSORIMOTOR INTEGRATION, AND BEHAVIOR

- PS2.046 Descending control of walking direction in *Drosophila***
Jan Ache, University of Würzburg Biocenter
- PS2.047 Moving to perceive vs moving to achieve: Trade-offs in flower approaches of hummingbird hawkmoths**
Aruna Raman, University of Edinburgh
- PS2.048 Characterization of central brain neurons controlling adaptive walking in *Drosophila***
Fathima Mukthar Iqbal, Neurobiology and Genetics Theodor-Boveri-Institute, Biocenter University of Würzburg, Germany
- PS2.049 Shared control of reaching and walking in the lateral frontal cortex of freely moving macaques**
Rossella Sini, University of Parma
- PS2.050 Trade-offs between pitch and tempo matching in counter-singing nightingales**
Juan Sebastian Calderon Garcia, ISTA
- PS2.051 Beyond locomotion: motor control of a sonic spinal circuit**
Lea Thümminger, University of Graz
- PS2.052 Behavioural programs in mini-brains: Optomotor response in a miniature insect**
Tomer Urca, University of Rostock
- PS2.053 Disentangling cephalopod chromatophores motor units**
Mathieu Renard, Max Planck Institute for Brain Research
- PS2.054 A bat's-ear view: How sensory information streams govern behavioral transitions in the wild**
Leonie Baier, Aarhus University
- PS2.055 Spinal cord neuron density, morphology, and androgen receptor expression associated with a novel hind limb communication signal in foot-flagging frogs (*Staurois parvus*)**
Lisa Mangiamele, Smith College
- PS2.056 Vocal muscle phenotype reflects sexual dimorphism in singing behaviour in zebra finches**
Melanie Brauckhoff, University of Southern Denmark
- PS2.057 What's a startle response? Novel approaches for classifying diverse reactions to looming stimuli in *Drosophila melanogaster***
Charlie Rosher, Champalimaud Foundation
- PS2.058 Subthreshold responses to tutor and bird's own song playback in area X neurons of juvenile zebra finches**
Aditi Agarwal, MPI-Biological Intelligence
- PS2.059 Basal ganglia-cortical dynamics during sleep in songbirds**
Nicolas Giret, Institut des Neurosciences Paris Saclay CNRS, Université Paris Saclay
- PS2.060 Widespread temporal niche partitioning in an adaptive radiation of cichlid fishes**
Annika Nichols, University of Basel

- PS2.061 Tactile information guides decision-making in a unique oviposition behaviour**
Tim-Philipp Lütkemeyer, Bielefeld University
- PS2.062 The neural control of gait switching in larval zebrafish**
Elena Maria Daniela Collins, Champalimaud Foundation
- PS2.063 Visually-driven escape maneuvers by individual fish and fish groups**
Andrew Hein, Cornell University
- PS2.064 Sex in the city: Sensory resilience and vulnerability of mating in malaria mosquitoes**
Judy Bagi, University College London
- PS2.065 Behavioral algorithms of ontogenetic switching in larval and juvenile zebrafish phototaxis**
Max Capelle, University of Konstanz
- PS2.066 Evolution of neural circuits underlying behavioral variation in *Drosophila* courtship**
Juliana Rhee, Rockefeller University
- PS2.067 Calcium imaging of neural activity during escape behavior in free-swimming zebrafish**
Reid Doctor, National Institutes of Health
- PS2.068 How to be precise - ion channels contributing to spiking precision in vocal motoneurons**
Maximilian Bothe, University of Graz
- PS2.069 Development of vocal responses to social calls in juvenile male zebra finches**
Neetash Mysuru Rajagopalachari, Max Planck Institute for Ornithology
- PS2.070 Fish couple forecasting with feedback control to chase and capture moving prey**
Benjamin Martin, University of Amsterdam
- PS2.071 A novel conductance-based model of plateau generation**
Max Kenngott, Brandeis University
- PS2.072 Vocal partner familiarity influences call responses and neural activity in zebra finch premotor nucleus HVC**
Carlos Manuel Gomez Guzman, MPI for Biological Intelligence
- PS2.073 Tardigait: Coordination and neuromodulation of tardigrade locomotion**
Gal Haspel, New Jersey Institute of Technology
- PS2.074 Neuronal mechanisms of visuomotor stability and control in butterflies**
Jack Supple, Imperial College London
- PS2.075 Voluntary passive movement – do flies play?**
Wolf Huetteroth, Leipzig University
- PS2.076 Revealing the dynamics of *Danionella dracula* fights**
Sarah Campbell, Cornell University
- PS2.077 Changes in respiratory pressure at syllable onset are correlated with variable sequencing of bengalese finch song**
Shouvik Mandal, Indian Institute of Science Education and Research, Pune
- PS2.078 A comparative study of temperature resilience in pattern generating circuits**
Wolfgang Stein, Illinois State University

- PS2.079 Deciphering the neural pathway responsible for the initiation and progression of introductory notes in female-directed song of the zebra finch**
Dhanya Raj, Indian Institute of Science Education and Research Pune
- PS2.080 Characterization of song development in bengalese finches and the influence of passive tutoring on song**
Avani Koparkar, Institute for Neurobiology University of Tuebingen
- PS2.081 Axial kinematics and muscle activity during walking and swimming of the centipede *Scolopendra subspinipes***
Kotaro Yasui, Tohoku University
- PS2.082 Transformation of premotor neural activity and respiratory pressure during the repetition of introductory notes in the male zebra finch**
Sonam Chorol, Indian Institute of Science Education and Research Pune
- PS2.083 Development of locomotor behaviour during metamorphosis in the western clawed frog, *Xenopus tropicalis***
Aditya Lyer, MPINB-caesar
- PS2.084 Predictive coding and oscillations underlie the optomotor response in ants**
Océane Dauzere-Peres, CNRS CRCA
- PS2.085 Hopper by name, hopper by nature: investigating the locust startle response using whole-brain functional imaging.**
Hannes Kübler, University of Konstanz
- PS2.086 Patterns of inhibition in fly grooming behavior reveal neural circuit organization**
Julie Simpson, University of California Santa Barbara
- PS2.087 Alarm pheromone modulates directional decision-making in the Mauthner-cell startle circuit**
Denis Shor, The Graduate Center, City University of New York
- PS2.088 Representations of floral features for foraging tasks in the neck connective of the tobacco hawkmoth, *Manduca sexta***
Simon Sponberg, Georgia Tech
- PS2.089 The amsh glia of *C. elegans* modulates the duration of touch-induced escape responses**
Andres Vidal-Gadea, Illinois State University
- PS2.090 Functional analysis of the locomotor circuits in the ventral nerve cord of *Drosophila melanogaster***
Alice Robie, Janelia Research Campus, HHMI
- PS2.091 The Mauthner array is necessary to generate distinct types of escapes in zebrafish larvae**
Joao Marques, Champalimaud Research
- PS2.092 MATREX VR: Real animals forming virtual swarms through the matrix**
Pavan Kaushik, Max Planck Institute of Animal Behaviour
- PS2.093 Is the motor program of faster insects more temporally precise?**
Leo Wood, Georgia Institute of Technology

- PS2.094 Phototaxis in the primitive chordate *Ciona*: Orienting behavior and neural circuits**
William Smith, University of California Santa Barbara
- PS2.095 Dopamine guides vocal learning through reinforcement**
Vikram Gadagkar, Columbia University
- PS2.096 Dissecting swim-to-walk transition and its neural basis during *Xenopus* frog metamorphosis**
David Vijatovic, IST Austria
- PS2.097 Neural circuits underlying optomotor responses in larval teleost fish**
Zichen He, Duke University
- PS2.098 Neural mechanisms underlying task-specific activity of pre-motor interneurons and motor neurons of an insect leg**
Ansgar Büschges, Institut of Zoology, University of Cologne
- PS2.099 An efference copy suppresses optomotor responses in flying *Drosophila***
Philippe Fischer, University of Sheffield
- OTHER**
- PS2.100 A neural path for visual discrimination of magnitudes in zebrafish**
Andrea Messina, University of Trento
- PS2.101 Custom-tailored viral vectors for protein expression in the quail's brain**
Achinoam Blau, Technion
- PS2.102 Molecular basis of parasite-induced behaviors in the golden shiner (*Notemigonus crysoleucas*)**
Laura D. Nicolas, Nova Southeastern University Florida
- PS2.103 Neuronal layers in the dorsal telencephalon of the peacock gudgeon**
Ruth Gutjahr, University of Graz
- PS2.104 Shared tribulations of neuroethologists and behavioural ecologists**
Alex Kacelnik, Oxford University and Pembroke College
- PS2.105 Mapping the neural basis for individual differences in the exploratory behavior of adult zebrafish**
Neha Rajput, Wayne State University
- PS2.106 Modeling autism spectrum disorders in zebrafish: Social deficits, visual lateralization and cerebral asymmetry**
Paola Sgadò, University of Trento
- PS2.107 Quantifying the energetic cost of pollen collection**
Elizabeth Nicholls, University of Sussex
- PS2.108 Individual differences in behavior: A multi-trait study across different ant species**
Liselotte Guillemin, Université Sorbonne Paris Nord
- PS2.109 Effect of narrowband monochromatic blue and green light on magnetic orientation of night-migratory songbirds**
Baladev Satish, Carl von Ossietzky University

- PS2.110 Comparisons of neurobiological characteristics of vigilance in wild and laboratory *Rattus norvegicus***
Aditya Narayanan, University of Richmond
- PS2.111 Comparative investigations of wild and laboratory *Rattus norvegicus*: behavioral and neurobiological insights**
Andrés Mauco, University of Richmond
- PS2.112 Host social behavior shapes microbiome composition and function**
Laura Desban, University of Oregon
- PS2.113 A non-invasive method for describing and classifying internal states during immobility in insects**
Mikkel Roald-Arbøl, University of Sussex
- PS2.114 The footprint of anthropogenic noise on tunicate neuroethology**
Marios Chatzigeorgiou, University of Bergen
- PS2.115 Characterization of intersexual agonistic behavior in the weakly electric fish *Gymnotus omarorum***
Rossana Perrone, Instituto Clemente Estable Facultad de Psicología
- PS2.116 DH44 modulation of defensive behaviors in *Drosophila melanogaster***
Violetta La Franca, Champalimaud Centre for the Unknown
- PS2.117 Who are you calling a shrimp? Evaluating aggression, boldness, and behavioral strategies in invasive stomatopods**
Sophia Hanscom, University of Hawai'i at Mānoa
- PS2.118 Leaderless consensus decision-making determines cooperative transport direction in weaver ants**
Daniele Carlesso, University of Konstanz
- PS2.119 Untangling wires: Uncovering the organisational architecture of neuronal networks in the posterior slope region of the *Drosophila* brain**
Hannah Jones, University of Cologne

SOCIAL BEHAVIOR AND NEUROMODULATION

- PS2.120 The impact of parental care quality on Mimetic poison frog tadpole behavior and physiology**
Penelope Baker, Stanford University
- PS2.121 Epigenetic mechanisms of social plasticity in poison frog tadpoles**
Keira Nakamura, Stanford University
- PS2.122 Exploring neuroendocrine mechanisms underlying sex differences in territorial aggression: The case of the dyeing poison frog**
Camilo Rodríguez, Stanford University
- PS2.123 Whole-brain representation of multimodal courtship cues**
Stefano Zucca, University of Turin
- PS2.124 Evoked vocal responses in a frog are modulated by dopamine**
Logan James, McGill University
- PS2.125 Contributions of different brain areas to social recognition in mice**
Laura Schwarz, Sainsbury Wellcome Centre, UCL

- PS2.126 Female vocal feedback promotes song learning in male juvenile zebra finches**
Linda Bistere, Max Planck Institute for Biological Intelligence
- PS2.127 Visual-motor circuits for action coordination in schooling fish**
Jo-Hsien Yu, University of California San Diego
- PS2.128 How do brains balance information for collective behavior?**
Chelsea Cook, Marquette University
- PS2.129 Neuromodulator receptor gene expression in electrosensory brain regions varies across species of electric knifefishes**
Megan Freiler, University of Minnesota
- PS2.130 Maternal separation affects social vocalizations in juvenile and adult mongolian gerbils (*Meriones unguiculatus*)**
Ryo Nishibori, Doshisha University
- PS2.131 Interactions between social experience and alcohol sensitivity in crayfish**
Jens Herberholz, University of Maryland
- PS2.132 Neural adaptations in parasitic ants and their closely related hosts**
Frane Kamhi, Denison University
- PS2.133 Increased aggression after the experience of maternal separation in adult Mongolian gerbils (*Meriones unguiculatus*)**
Harutaka Nakagawa, Doshisha University
- PS2.134 Circadian neuropeptidomics for the analysis of coupling factors controlling multiscale behavioral rhythms in *Drosophila melanogaster***
Deepika Bais, University of Kassel
- PS2.135 Modification of taste performance by octopamine and dopamine in different honeybee species**
Giftly Alin Jacob, University of Wuerzburg, Germany
- PS2.136 Singing the praises of dopamine modulation: A comparison across cricket species of dopaminergic neurons in the context of acoustical communication**
Karen Mesce, University of Minnesota
- PS2.137 Mouse 'teachers' and mouse 'midwives': Behavioral mechanisms of co-parenting that improve maternal-infant survival**
Luisa Schuster, New York University
- PS2.138 The role of oxytocin in fitness: Insights from mating behaviour and reproductive outcomes in zebrafish**
Kyriacos Kareklas, Instituto Gulbenkian de Ciência (IGC)
- PS2.139 Neural correlates of emotional vocal communication in rats: Involvement of anterior cingulate cortex**
Riseru koshiishi, University of Tokyo Teikyo University
- PS2.140 Social distancing: Group behavior and the underlying neural circuits in *Drosophila melanogaster* larvae**
Akhila Mudunuri, University of Konstanz
- PS2.141 Social interactions of gerbils with different expertise levels during perceptual decision making**
Ece Gökçe Dogu, LMU Munich

- PS2.142 A neuronal hub for social behavior in male *Drosophila***
Elizabeth Kim Lillvis, Howard Hughes Medical Institute Janelia Research Campus
- PS2.143 Circuit mechanisms flexibly regulating aggression across sexes in *Drosophila***
Catherine Schretter, HHMI - Janelia
- PS2.144 Inter-individual covariation between HPA response and stress-induced social behaviour in large-billed crows (*Corvus macrorhynchos*)**
Chisato Yatsuda, Keio University
- PS2.145 Insights from single-nuclei transcriptomics into the evolution and neural basis of parental care in two three-spined stickleback ecotypes**
Usan Dan, University of Illinois Urbana-Champaign
- PS2.146 Conserved perceptual biases shape the evolutionary design of an anuran visual signal**
Nigel Anderson, Brown University
- PS2.147 Transcriptome evolution in the social brain reflects phylogeny, neuroanatomy, life history, and behavior across vertebrates**
Hans Hofmann, The University of Texas at Austin
- PS2.148 Molecular evolution of the genes involved in social behaviour across Lake Tanganyika's cichlids adaptive radiation**
Pol Sorigue, Instituto Gulbenkian de Ciência
- PS2.149 Brood care in shell-dwelling cichlids is governed by independent maternal and larval timing mechanisms**
Ash Parker, MPI of Biological Intelligence
- PS2.150 Social regulation of the stinging behaviour of honeybees**
Kavitha Kannan, University of Konstanz
- PS2.151 Dissecting the neuronal mechanisms of mouthbrooding behaviour in the African cichlid *Astatotilapia burtoni***
Gonçalo Igreja André, University of Maryland, College Park
- PS2.152 Autonomic biomarkers correlate brain activity during social behaviours in birds**
Jelena Katic, Dept. of Behavioral & Cognitive Biology University of Vienna
- PS2.153 Higher-order social interactions shape courtship behavior in *Drosophila***
Amirmohammad Naderi, University of Göttingen Neural Computation and Behavior Lab European Neuroscience Institute
- PS2.154 Toward understanding the molecular basis of honey bee behaviors: Functional analysis of *mkast*, a gene selectively expressed in the adult brain, by producing knocked-out mutants**
Hiroki Kohno, The University of Tokyo Graduate School of Science
- PS2.155 Implications of nonapeptides in the calling behavior of a South American treefrog**
Paula Pouso, Universidad de la Republica
- PS2.156 To care or to cannibalize? Mechanisms of parental care trade-offs**
Eva K Fischer, University of California Davis
- PS2.157 Machine learning and mathematical modeling as complementary approaches to understanding marmoset vocal and social behaviors**
Nikhil Phaniraj, University of Zurich

- PS2.158 Seasonality of neuroestrogens and their relationship with aggression: Insights from the electric fish model *Gymnotus omarorum***
Cecilia Jalabert, Instituto Clemente Estable
- PS2.159 Chemical cues mediate mound building behavior in termites**
Sree Subha Ramaswamy, National Centre for Biological Sciences, Tata Institute for Fundamental Research
- PS2.160 Emerging from solitude: Understanding behavioural transitions of desert locusts through visual and olfactory stimuli**
Nina Schwarz, Universität Konstanz Neurobiologie
- PS2.161 Tethered flight in a robotic tunnel simulator elicits waggle dancing**
Marie Messerich, Freie Universität Berlin
- PS2.162 Local speed transfers drive the social synchronization of circadian activity in honeybee colonies**
Tim Landgraf, Freie Universität Berlin
- PS2.163 Exploring the determinants of shoaling decisions in zebrafish using virtual reality**
Kajal Kumari, Max Planck Institute of Animal Behavior
- PS2.164 Mapping the brain of the clonal raider ant *Ooceraea biroi* with transmission electron microscopy**
Lindsey Lopes, Rockefeller University
- PS2.165 Effect of neuropeptides on the behavioural hierarchy of zebrafish larvae**
Catarina Matos, Champalimaud Research
- PS2.166 Social context of acoustic communication in the small teleost *Danionella cerebrum***
Verity Cook, Charité - Universitätsmedizin Berlin
- PS2.167 Neural circuits underlying socially acquired fear memories in mice**
Veronica de la Fuente, IFIBYNE-UBA-CONICET Universidad Buenos Aires
- PS2.168 Neural and molecular correlates of vertebrate affiliative evolution**
Jessica Nowicki, Stanford University
- PS2.169 Uncovering the mechanisms of testosterone-induced vocal masculinization in African clawed frogs: The roles of perineuronal nets**
Ayako Yamaguchi, University of Utah
- SPATIAL ORIENTATION AND NAVIGATION**
- PS2.170 Functional neuroanatomy of the goldfish telencephalon**
Shachar Givon, Ben Gurion University of the Negev
- PS2.171 Celestial navigation in the Northern elephant seal**
Jesse Granger, Duke University
- PS2.172 Australian bogong moths use the earth's magnetic field as a compass for navigation during long-distance migration**
Hui Chen, Lund University
- PS2.173 Weighting spatial memory and distal sensory cues in Egyptian fruit bat navigation**
Keegan Eveland, Johns Hopkins University

- PS2.174 How dorsal directional and ventrolateral optic flow responses integrate to guide hummingbird hawkmoth flight**
Anna Stöckl, University of Konstanz
- PS2.175 A robot model of compass cue calibration in the insect brain**
Robert Mitchell, Lund University
- PS2.176 A novel path integration circuit in the ant brain**
Saroja Ellendula, Macquarie University
- PS2.177 Neuroethology of navigation in the real world: Head-direction cells serve as a neural compass in bats navigating outdoors on a remote oceanic island**
Shaked Palgi, Weizmann Institute of Science
- PS2.178 Fine-scale navigation: How ants perform systematic searches**
Patrick Schultheiss, University of Wuerzburg
- PS2.179 Time compensation in the celestial compass of insects**
Evipidis Gkaniias, University of Edinburgh
- PS2.180 Sparse versus dense coding of very large environments in hippocampal subregions CA3 and CA1**
Shir Maimon, Weizmann Institute of Science
- PS2.181 How do bees see the world? A normative deep reinforcement learning (DRL) model for insect navigation**
Stephan Lochner, Albert-Ludwigs-Universität Freiburg
- PS2.182 Can fish take shortcuts? A study of vector-based navigation in fish**
Adelaide Sibeaux, The University of Oxford
- PS2.183 Simulating insect polarization vision to model a biologically accurate polarization compass**
Georgios Kolyfets, University of Konstanz
- PS2.184 Scaling the leap: Effect of miniaturisation and sexual dimorphism on jump kinematics in Australian spiders**
Ajay Narendra, Macquarie University
- PS2.185 The regulation of collective motion in desert locusts**
Sercan Sayin, University of Konstanz
- PS2.186 Propagation and resolution of incomplete information from polarized light in social and semi-social insects**
Frida Hildebrandt, Universität Konstanz
- PS2.187 Environmental features and intrinsic preferences shape bumblebee goal-learning in virtual reality**
Sonja Eckel, Bielefeld University
- PS2.188 A model and a test of honeybee dance recruit accuracy**
Anna Hadjitofi, Inst. of Perception, Action & Behaviour University of Edinburgh
- PS2.189 Information flow in insect brains at the synaptic level**
Griffin Badalamente, Lund University
- PS2.190 Parallel vector memories in the brain of a bee as a foundation for flexible navigation**
Rickesh Patel, Lund University

- PS2.191 An anatomically constrained model for angular velocity integration in the locust brain**
Kathrin Pabst, Philipps-Universität Marburg
- PS2.192 Modular assembly of the network motifs for vector computation in the insect brain**
Jaison Omoto, California Institute of Technology
- PS2.193 Flight behavior optimization: Unraveling bumblebee strategies in navigating varied cluttered terrains**
Manon Jeschke, Bielefeld University
- PS2.194 Structure, development and function of the neural circuitry controlling navigation in the *Drosophila* larva**
Volker Hartenstein, University of California Los Angeles
- PS2.195 Compensation to visual impairments and behavioral plasticity in navigating ants**
Sebastian Schwarz, Universität Graz
- PS2.196 Developing *Parhyale hawaiiensis* as a comparative model of olfactory navigation**
Theresa Steele, New York University
- PS2.197 Investigating insect spatial learning in virtual reality**
Jens Lindemann, Bielefeld University
- PS2.198 Walking with dethier: From local search behaviour to social communication**
Manal Shakeel, National Centre for Biological Sciences
- PS2.199 Neural representation of human experimenters in the bat hippocampus**
Madeleine Snyder, University of California Berkeley
- PS2.200 Connectome and functional imaging reveal visual features critical for navigation in *Drosophila melanogaster***
Sung Soo Kim, University of California, Santa Barbara
- PS2.201 Input from several sources of directional information can decrease orientation precision**
Shahrzad Shaverdian, Lund University
- PS2.202 Knowing your neighbourhood: How cluttered environments shape initial learning flights of bumblebees**
Annkathrin Sonntag, Bielefeld University
- PS2.203 Maintaining head direction estimates in natural scenes with a spiking neural network model of the central complex and active behavioural strategies**
Rachael Stentiford, University of Sussex
- PS2.204 Identifying neuromodulatory input neurons to the fan-shaped body of the insect central complex**
Matilda Langreiter, Lund University
- PS2.205 Studying 3D navigation in the spontaneously behaving common marmoset**
Francesca Lanzarini, Ernst Strüngmann Institute
- PS2.206 Neuroanatomical variations in the ball-rolling beetle's central complex**
Auguste de Pennart, Lund University
- PS2.207 Integration of navigational cues in the central brain of *Drosophila melanogaster***
Aleksandra Simdianova, Free University of Berlin

- PS2.208 The importance of dorsal landmarks for navigation in dark and cluttered forest environments**
Paul Scheepers, Lund Universitet Biologihuset
- PS2.209 Distinct navigational strategies underlie orienting behavior in fruit flies**
Shivam Chitnis, HHMI Janelia Research Campus
- PS2.210 Dialects in honey bee dance communication**
Axel Brockmann, National Centre for Biological Sciences Tata Institute of Fundamental Research
- PS2.211 Navigation and orientation in *Drosophila melanogaster* – do larvae keep track of their spatial position?**
Jessica Kromp, University of Leipzig Institute of Biology
- PS2.212 A model for visual decision making and exploration in *Drosophila melanogaster***
Gerit Linneweber, FU Berlin
- PS2.213 Fast positional reference formation in hover feeding hawkmoths**
Varun Sharma, Georgia Tech
- PS2.214 Altitude-dependent perception of ambient light conditions**
Jacqueline Degen, University of Würzburg Biocenter
- PS2.215 Unravelling the effects of rotations on oriented behaviour**
Elin Dirlik, Lund University
- PS2.216 A novel navigation circuit in the hymenopteran central complex**
Valentin Gillet, Lund University
- PS2.217 A projector-based virtual reality display for 3D insect flight**
Abel Corver, Lund University Lund Vision Group, Department of Biology
- PS2.218 Investigating visual navigation with spiking neural network models of the insect mushroom bodies**
Oluwaseyi Jesusanmi, University of Sussex
- PS2.219 Navigation with touch**
Wenhan Luo, Max Delbrück Center(MDC)
- PS2.220 Distance dependency of light attraction in flying insects**
Yash Sondhi, Florida International University
- PS2.221 Feeding site fidelity in mauritian flying foxes *Pteropus niger***
Ksenia Krivoruchko, Tel Aviv University

VISION AND PHOTORECEPTION

- PS2.222 Pretectal neurons in zebra finches modulate with optic flow during flight**
Eric Press, University of British Columbia
- PS2.223 Investigating the visual physiology of insect ocelli**
Marisa McDonald, Air Force Research Laboratories
- PS2.224 Exploring visual motion neurons in *Drosophila***
Sanna Koskela, Janelia Research Campus/HHMI

- PS2.225 Single-cell transcriptomics of a looming-detection neuron in isolated and crowded *Schistocerca* sheds light on sensory processing for collision-avoidance behavior**
Richard Dewell, Baylor College of Medicine
- PS2.226 Seasonal plasticity in colour vision of damselfishes and surgeonfishes**
Abigail Shaughnessy, University of Queensland
- PS2.227 Dissection of the opponent mechanisms for processing skylight cues in the distal medulla of *Drosophila melanogaster***
Solenne Puisais, Freie Universität Berlin
- PS2.228 Probing binocular vision in *Drosophila melanogaster***
Ronny Rosner, JGU Mainz
- PS2.229 Body size and light environment modulate flight speed in free flying *Drosophila melanogaster***
Elina Barredo, Florida International University
- PS2.230 The repeated evolution of eye loss in spiders**
Marcial Antonio Galan Sanchez, Museum für Naturkunde
- PS2.231 Variable adaptation tunes dragonfly optic flow neurons to relevant speed ranges**
Andrew McCauley, University of Adelaide
- PS2.232 Neural representations of distributed vision in the eyed chiton *Acanthopleura granulata***
Daniel Chappell, SAIC / Air Force Research Labs
- PS2.233 The optomotor response depends on motion direction and varies across the visual field during hovering flight in hummingbirds**
Jo Thériault, University of British Columbia
- PS2.234 Evolutionary, developmental, and ecological drivers of eye morphology in the modular visual system of spiders**
Sam J. England, Museum für Naturkunde Berlin
- PS2.235 Circuit implementation of multimodal integration in skylight navigation**
Xin Zhong, Free University Berlin
- PS2.236 Recording animal-view videos of the natural world using a novel camera system and software package**
Vera Vasas, University of Sussex
- PS2.237 Polarisation perception in modified ocelli of apoid wasps**
Stefan Graf, Museum für Naturkunde Berlin
- PS2.238 Behavioral responses of free-flying *Drosophila melanogaster* to shiny reflecting surfaces**
Edouard Joseph Babo, Freie Universitaet Berlin
- PS2.239 Multiple opsin expression in a box jellyfish eye**
Alison Irwin, University of Copenhagen
- PS2.240 The evolution of color vision in jumping spiders**
Nathan Morehouse, University of Cincinnati
- PS2.241 Visual projection neurons in the complete connectome of the *Drosophila* optic lobe**
Pavithra Seenivasan, Janelia Research Campus, HHMI

- PS2.242 Luminance-invariant visual processing is a general property of diverse visual system**
Annika Celine Bast, Johannes Gutenberg-University
- PS2.243 Improved semi-automated eye tracking in freely moving animals**
Abhilash Cheekoti, MPI for Neurobiology of Behavior
- PS2.244 Evolutionary remodeling of the primate visual cortex**
Fred Wolf, MPI-DS & Univ Göttingen
- PS2.245 Sensing the change: Bumblebees decide when to forage during the low light conditions of sunrise and sunset**
Natalie Hempel de Ibarra, University of Exeter
- PS2.246 Group size discrimination in zebrafish: A study of the role of visual dynamic features**
Matilde Perrino, University of Trento
- PS2.247 Simulating a dynamic vision sensor to compare moving and static photoreceptors**
Cora Hummert, University of Edinburgh
- PS2.248 Stress increases the resolution of bee vision**
Olga Procenko, Newcastle University
- PS2.249 Colour blinding nemo: The development and application of CRISPR/cas9 and single-cell RNA sequencing to study vision in the false clownfish, *Amphiprion ocellaris***
Fabio Cortesi, The University of Queensland
- PS2.250 Exploring visual feature space in *Drosophila melanogaster***
Jessica Zung, Columbia University Howard Hughes Medical Institute
- PS2.251 Polarization vision as a source of visual contrast in crabs**
Martin Beron de Astrada, Buenos Aires University
- PS2.252 Molecular and functional organization of the octopus visual system**
Judit Pungor, University of Oregon
- PS2.253 Neuroanatomy of the visual pathway of the harbour seal (*Phoca vitulina*) brain**
Julia Schnermann, Universität Rostock
- PS2.254 The synaptic complexity of a lobula giant neuron in crabs**
Julieta Sztarker, IFIBYNE CONICET-Universidad de Buenos Aires
- PS2.255 Recording from identified visual neurons in a moving crab**
Daniel Tomsic, University of Buenos Aires IFIBYNE-CONICET
- PS2.256 From night stalkers to day walkers: Diurnal foraging in a nocturnal predator, the ogre-faced spider**
Jay Stafstrom, Cornell University
- PS2.257 Butterfly hindsight: mediated by non-visual UV rhodopsin**
Kentaro Arikawa, SOKENDAI

EXHIBITORS

PHENOSYS

Founded 2006 in Germany, PhenoSys is a dynamic technology & service company, providing solutions for animal behaviour- and brain research.

The miniature 2-Photon microscopy system (Mini2P) for fast, high-resolution, multi-plane calcium imaging in freely moving mice, is the latest innovation in our product portfolio. Moreover, we offer virtual reality applications for rodents that are combined with in-vivo imaging or electrophysiological recording, automated measurement of the optomotor response to test for visual abilities, RFID based activity tracking of multiple rodents in home cage environments, and systems for easy and reliable indirect calorimetry measurements.

Central to our ethos is the close collaboration with our customers. By fostering meaningful partnerships, we continuously innovate and refine our products to meet the evolving needs of the scientific community.

For more information: info@phenosys.com

BRUKER

Bruker is enabling scientists to make breakthrough discoveries and develop new applications that improve the quality of human life. In close cooperation with our customers, Bruker is enabling innovation and customer success in life science molecular research, in applied and pharma applications, in microscopy, as well as in cell- and neuro-biology.

Bruker's suite of fluorescence microscopy systems provides a full range of solutions for life science researchers. Our Ultima multiphoton imaging systems provide the imaging depth, speed, and resolution required for intravital imaging applications in oncology, immunology, and neuroscience. With the modular design of the Ultima multiphoton microscopes, nearly any kind of biological sample and model organism from bacteria to rodents can be imaged.

For more information, please visit www.bruker.com/FM

THORLABS

TRORLABS, a vertically integrated photonics products manufacturer, was founded in 1989 to serve the laser and electro-optics research market. As that market has spawned a multitude of technical innovations, Thorlabs has extended its core competencies in an effort to play an ever-increasing role to serve the Photonics Industry at the research end, as well as the industrial, life science, medical, and defense segments. The organization's highly integrated and diverse manufacturing assets include semiconductor fabrication of Fabry-Perot, DFB, and VCSEL lasers; fiber towers for drawing both silica and fluoride glass optical fibers; MBE/MOCVD epitaxial wafer growth reactors; extensive glass and metal fabrication facilities; advanced thin film deposition capabilities; and optomechanical and optoelectronic shops.

More information: www.thorlabs.com

OPEN EPHYS (OEPS)

At Open Ephys we develop, distribute, and support a wide range of open-source tools for neuroscience research. We offer high-quality, affordable extracellular electrophysiology acquisition systems, miniaturized microscopes and behavioral devices. Our latest system, ONIX, is our fully

integrated solution for complex chronic freely-behaving experiments using neuropixels, tetrodes, silicon probes or miniscopes.

Aside from our own ready made tools, we turn cutting-edge tools developed by scientists into reliable, well-supported products and design and build custom solutions for neurobehavioral applications. We provide documentation, technical support and specialized training to help researchers understand how to use the systems and reduce the time needed to get experiments up and running.

For more information: www.open-ephys.org

THE MAX-PLANCK INSTITUTE FOR THE NEUROBIOLOGY OF BEHAVIOR – CAESAR (MPINB)

The MPI for Neurobiology of Behavior – caesar (MPINB) in Bonn focuses on basic research in neuroethology. International researchers at the institute study how the collective activity of vast numbers of neurons gives rise to the plethora of animal behaviors. The interdisciplinary research spans from imaging neural circuits at the nanoscale to analyzing neural activity in a freely moving and naturally behaving animal. The MPINB works closely with the University of Bonn and other local research institutes to train the next generation of young scientists in a joint graduate school.

More information: www.mpinb.mpg.de

WAS THIS IT – ARE WE DONE?

There will be more Neuroethology for you:



Neuroethology: Behavior, Evolution and Neurobiology

Gordon Research Conference

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

June 29 – July 4, 2025

Where:

Renaissance Tuscany Il Ciocco, Via Giovanni Pascoli, Lucca (Barga), Lucca, Italy

Chairs: Julie H. Simpson and Miriam Liedvogel

Vice Chairs: David Schulz and Eva K Fischer

We are very much looking forward to welcoming you to GRC Neuroethology, held June 29 – July 4, 2025 at the lovely location Renaissance Tuscany Il Ciocco. The programme will integrate deep roots and new branches of the field, and in the spirit of Krogh's many marvelous animals, showcase a variety of organisms, highlighting wonderful work carried out in the field and in the lab. We will see how animals manage to thrive on a changing planet with themed sessions all the way from the level of the sensor to behavior, neuronal integration, and cognition.

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

More Information:

www.grc.org/neuroethology-behavior-evolution-and-neurobiology-conference/2025/

BECOME A MEMBER

If you are not an ISN member yet, make sure to visit the ISN web page: www.neuroethology.org



International Society for
Neuroethology

SEE YOU ALL AT ICN2026 IN VANCOUVER!



Image credits

p. 6, Berlin TV Tower: © Freepic@rcphotostock; p. 7, Karen A. Mesce: © Karen A. Mesce;
p. 8, Mathias F. Wernet: © Mathias F. Wernet; Constance Scharff: © Constance Scharff;
Rüdiger Krahe: © Rüdiger Krahe; p. 9, Elke Buschbeck: © Elke Buschbeck; Coen P. H. Elemans:
© Coen P. H. Elemans; p. 18, *Apteronotus leptorhynchus*: © Guy l'Heureux; p. 28, Monarch butterfly:
© Freepic@rawpixel; p. 38, Zebra Finch: © Freepik@EyeEm; p. 82, Vancouver: © David G. Gordon,
CC BY-SA 4.0, <https://creativecommons.org/licenses/by-sa/4.0/>, via Wikimedia Commons



International Society for
Neuroethology

15th INTERNATIONAL CONGRESS OF NEUROETHOLOGY

28.07. – 02.08.2024 | BERLIN _ GERMANY