J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON

Sunday, October 18, 1981 St. Louis-Foy Rooms Los Angeles Hilton

9:00 Mark R. Braford, Jr.
"Notopterid Fishes and Electroreception"

9:30 C. B. G. Campbell
"On Theory-Making in Comparative Neurology"

10:00 Catherine Carr
"Connections of the Torus in Weakly Electric Gymnotiform Fishes"

10:30 Jeffrey T. Corwin
"Perpetual Growth and Increased Sensitivity in a Vertebrate Auditory Epithelium"

11:00 Thomas Finger
"Ascending Spinal Cord Pathways in the Sea Robin"

11:30 Zoltan Fuzessery
"Excitatory and Inhibitory Response Properties of Neurons in the Anuran Midbrain: Frequency and Intensity Selectivity"

1:00 Golda Kevetter and William D. Willis
"Collateralization of Long Tracts: Is Each long Tract a Distinct Entity?"

1:30 Robert B. Leonard and Teresa C. Ritchie
"Immunohistochemistry in Comparative Anatomy"

2:00 Anton Reiner
"Basal Ganglia - Tectal Relations in Sauropsids"

2:30 William M. Saidel
"Adaptation for Simultaneous Air and Water Vision in Some Fishes"

3:00 Break

3:30 Dolores M. Schroeder
"Central Pathways of the Infrared System in Crotalus"

4:00 Philip S. Ulinski
"Is Spatial Information Coded in the Tectorotundal Pathway"

4:30 Bernice M. Wenzel, Hutchinson
"Some Characteristics of the Avian Olfactory System"

5:00 Cash Bar

J. B. Johnston Club J. B. Johnston Club J. B. Johnston Club J. B. Johnston Club J. B. Johnston

J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB

Sunday, October 31, 1982 Nicollet Room D2 Hyatt Regency Hotel
PLEASE NOTE CHANGE IN STARTING TIME Minneapolis, Minnesota

8:00 William L. R. Cruce, Donald B. Newman, and Linda Larson-Prior
"Evolution and Homology in Motor Systems"

8:30 Walter K. Metcalfe and Charles Kimmel
"Circuits of Identified Neurons in Larval Zebrafish"

9:00 Carl Rovainen
"The Organization of Interneurons in the Lamprey Spinal Cord as Related to Swimming Activity"

9:30 Andrew H. Bass and Carl D. Hopkins
"Comparative Aspects of Electric Organ Morphology Among the Mormyrid Electric Fish"

10:00 COFFEE.

10:30 Mark R. Braford, Jr.
"The Strangest Thing I've Seen in the Medulla Lately--and Ever: The Vagal Lobes of Heterotis niloticus"

11:00 Paul Grobstein
"The Nucleus Isthmi in the Frog Rana pipiens: On the Problems of Interconnecting Visuotopic Maps"

11:30 David J. Ingle
"Functions of Pretectal Efferents to Brainstem in Frogs"

12:00 LUNCH BREAK

1:00 A. M. Granda
"Behavioral Visual Thresholds in Turtle"

1:30 Laura L. Bruce
"Organization and Evolution of the Reptilian Forebrain"

2:00 Anton Reiner
"Histochemical and Anatomical Conservatism of Strio-Tegmental Pathways Among Amniotes"

2:30 Steven E. Brauth
"Comparative Neurobiology of the Basal Ganglia"

3:00 COFFEE

3:30 Wally Welker
"Recent Studies of Cerebellar Circuits"

4:00 Roger L. Reep
"The Relationship between Prefrontal and Limbic Cortex"

4:30 BUSINESS MEETING

5:00 COCKTAIL HOUR (Cash Bar in Nicollet Room D1)

7:00 DINNER (To Be Announced)

J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB J. B. JOHNSTON CLUB

Sunday, November 6, 1983 — Boston, Massachusetts
Independence Room/Center and East Sections — Sheraton-Boston Hotel
(Please note alteration in room assignment)

8:00 David A. Bodznick
"Information Processing in the Ampullary Electrosensory System of Elasmobranchs"

8:30 Wil Smeets
"Secondary Olfactory Connections in Cartilaginous Fishes"

9:00 Harold H. Zakon
"The Well-Tempered Electroreceptor: Plasticity of Frequency Sensitivity in an Acousticolateralis Receptor"

9:30 Thomas Finger and D. P. Rao
"Lopsided Smelling: Asymmetry in the Olfactory System of a Flounder"

10:00 COFFEE (Independence Room/West Section)

10:30 Donna R. Onstott, R. Elde, and V. Seybold
"Studies on the Caudal Neurosecretory System of Fish"

11:00 Avis H. Cohen
"The Evolution of the Central Pattern Generator for Locomotion"

11:30 LUNCH BREAK

1:00 David J. Ingle
"Functions of Pretectal Efferents in Frogs"

1:30 David P. M. Northmore, David Sisson, and A. M. Granda
"Amphibious Vision in Turtles: Optics and Mechanisms of Accomodation"

2:00 Stephen B. Heller and Philip S. Ulinski
"A Common Pattern in the Geniculo-Telencephalic Recipient Zone of Reptiles and Birds"

2:30 Paul Desan
"Organization of Cerebral Cortex in Turtle"

3:00 COFFEE (Independence Room/West Section)

3:30 Alice S. Powers
"Functions of the Forebrain Visual System in Turtles"

4:00 Theodore H. Bullock, Roger Reep, Wally Welker, and Jack Johnson
"The Marvelous Morphology of Manatees"

4:30 BUSINESS MEETING

5:00 COCKTAIL HOUR (Cash Bar in Independence Room/West Section)

(Contrary to what was reported in the Preliminary Program for the Society for Neuroscience Meetings, no formal dinner for the J. B. Johnston Club is planned this year.)

1984--J. B. Johnston Club Program--1984

Wednesday, October 10, 1984
Grand Ballroom C/D

Anaheim, California
Anaheim Marriott Hotel

8:00 COFFEE AND SWEET ROLLS (Grand Ballroom A/B)

Symposium: PRINCIPLES OF BRAIN COMPARISON

8:45 "Strategies of Comparison"
R. Glenn Northcutt, Division of Biological Sciences, University of Michigan

9:20 "Transmitter Constancy and Neuronal Homology"
Harvey J. Karten, Department of Psychiatry & Behavioral Science, SUNY, Stony Brook

9:55 COFFEE (Grand Ballroom A/B)

10:20 "Determining Homologies in Sensory Systems of Mammals"
Jon H. Kaas, Department of Psychology, Vanderbilt University

10:55 "I Wish I'd Thought of That!"
Theodore H. Bullock, Department of Neurosciences, University of California, S.D.

11:30 LUNCH BREAK

1:00 Rudolf Nieuwenhuys
"The Telencephalon of Bony Fishes Revisited"

1:20 Mark R. Braford, Jr. and Catherine A. McCormick
"The Lateral Line System of Adult, Aquatic Apodan Amphibians: The 4th Condition"

1:40 Paul Gamlin and David H. Cohen
"A Second Ascending Tectofugal Visual Pathway in the Pigeon"

2:00 Jeffrey T. Corwin
"Auditory Neurons in Fish Shift Connections Throughout Life"

2:20 Dolores M. Schroeder
"Is the Intimate Relationship between Ligaments and Marginal Specialized Cells in the Spinal Cord Indicative of a CNS Mechanoreceptor?"

2:40 Timothy J. Meary
"Notes on Frog Brains"

3:00 COFFEE (Grand Ballroom A/B)

3:30 Karen J. Thompson
"Organization of Inputs to Motorneurons Generating Respiration in the Lamprey Medulla"

3:50 Bruce Mendelson, Walter Metcalfe, Paul Myers, Judith Eisen, Monte Westerfield, and Charles Kimmel
"Development of Circuits of Identified Neurons in the Larval Zebra Fish"

4:10 Curtis C. Bell and Paul Siesinger
"Sometimes Afferents Are Efferents Too"

4:30 Este Armstrong
"Relative Brain Size in Birds and Mammals"

4:50 Catherine Carr, Walter Heiligenberg, Gary Rose, Leonard Maler, and Barbara Taylor
"Computing Small Time Differences in Electric Fish"

5:10 BUSINESS MEETING

5:30 COCKTAIL & SOCIAL HOUR (Cash bar in Grand Ballroom A/B)

7:00 DINNER (Mexican Fiesta, Anaheim Marriott Hotel--room to be announced)

1985--J. B. JOHNSTON CLUB PROGRAM--1985

Sunday, October 20, 1985

Dallas, Texas

Hyatt Regency Dallas
Reunion Ballroom G/H

8:00 COFFEE AND ROLLS

8:30 Paul H. Desan
"Homologies between Cortical Areas in Reptiles and Mammals"

8:50 Anton Reiner
"Cortical Neuropeptides and the Evolution of Neocortex"

9:10 Lidia Mayner
"Marsupials--Neurologically Primitive or Advanced?"

9:30 Leah Krubitzer
"The Organization of Neocortex in Rodents"

9:50 COFFEE

10:15 Philip S. Ulinski
"Pattern and Design in Vertebrate Visual Systems: The Geniculocortical System in Turtles"

10:35 James A. Simmons
"What Do Different Kinds of Bats Perceive with Their Sonar When They Intercept Prey?"

10:55 Wolfgang Plassmann
"A Specialized Auditory System in Gerbils"

11:15 LUNCH BREAK

12:45 Leo S. Demski
"The Terminal Nerve of Toothed Whales Is Large and Myelinated: Why?"

1:05 Steven J. Zottoli
"Cholinergic Neurons in the Goldfish Brain: The Specificity of Cytochemical Markers"

1:25 Edward R. Gruberg
"What Does the Nucleus Isthmi Do?"

1:45 Steven E. Brauth
"Parallel Pathways in the Auditory System of the Budgerigar"

2:05 Michael Barry
"Evolution of Vertebrate Primary Octaval Nuclei and Ascending Auditory Pathways"

2:25 COFFEE

2:50 Symposium organized and introduced by Thomas E. Finger--"NEURAL CARTOGRAPHY: HOW DOES THE CNS USE SENSORY MAPS?"

"A Mapped Gustatory-Oral Reflex System: How Goldfish Sort Food from Mud", Thomas E. Finger

"Sensory Maps and Distributed Control of a Motor Response in Electric Fish: Neural Democracy in Action", Walter F. Heiligenberg

"The Translation of Sensory Signals into Commands for the Control of Saccadic Eye Movements: The Role of the Primate Superior Colliculus", David L. Sparks

"Between the Retinotectal Projection and Motor Output in Frogs: There's More There than Meets the Eye", Paul Grobstein

5:10 BUSINESS MEETING

5:30 COCKTAIL & SOCIAL HOUR (Cash bar)

7:30 DINNER

1986--J. B. JOHNSTON CLUB PROGRAM--1986

Sunday, November 9, 1986

Washington, D. C.

J. W. Marriott Hotel
Capital Ballroom, Salon F

8:00	COFFEE AND ROLLS
8:30	Werner Graf "Principles of Self-Motion Detection and their Intrinsic Representation in Vertebrates and Invertebrates"
8:50	James Schluger, Elizabeth Davis, and Carl D. Hopkins "How One Electric Fish Finds Another in the Dark"
9:00	Robert R. Capranica "Encoding of Amplitude Modulation and Frequency Modulation in the Auditory Nervous System in Anurans: Should You Modulate Your Mate after Eight?"
9:20	Catherine McCormick "Thoughts on the Evolution of Vertebrate Central Auditory Pathways"
9:50	COFFEE
10:15	Michael L. Fine and Paul J. Mosca "Anatomical Basis for Synchronization of Toadfish Sonic Muscle"
10:35	Andrew H. Bass "Evolution of Neuroeffector Pathways for Vertebrate Communication"
11:05	Ford F. Ebner "Regulation of Synaptic Efficacy"
11:25	Ellen R. Grass "The Satisfaction of Inquiry: Lessons from Nautilus"
11:45	LUNCH BREAK
1:00	Richard J. Schneider "The Importance of the Evolution of Hair Follicle Receptors: An Evolutionarily Advantageous Mammalian Innovation?"
1:20	Barbara L. Finlay "Constraints on Developmental Mechanisms that Produce Evolutionary Variations in Mammalian Retinal Topography"
1:40	Paul Gamlin "Have the Individual Pretectal Nuclei and their Visuomotor Roles Been Conserved during Evolution?"
2:00	David Ingle and Victoria Arango "Tectal Cell Morphology and Function: A Frog Vs. Toad Comparison"
2:20	Robert C. Eaton and Randolf Didomenico "The Causal Objections to Inactivation Procedures for Deducing Function from Structures"
2:40	COFFEE
3:05	Joseph G. Dulka "A New Sex Pheromone System in Goldfish: Is the Terminal Nerve Involved?"
3:25	Mark Richard Davis "Sexual Maturation and Development of Forebrain Peptidergic Neurons are Modulated by Social Environment in the Cichlid Fish Haplochromis burtoni"
3:45	Este Armstrong "Relative Size of the Anterior Thalamic Nuclei Predicts Anthropoid Social Organization"
4:05	W. J. A. J. Smeets and Gloria Meredith "The Evolution of the Dopaminergic System in Vertebrates"
4:35	BUSINESS MEETING
5:00	COCKTAIL & SOCIAL HOUR (Cash bar)
7:30	DINNER

SFN/JBJC 1987

8:00 COFFEE AND ROLLS

8:30 *Paul Grobstein*
"Lesion Experiments: What They Can and Cannot Do for Integrative Neurobiology, Continued"

8:50 *Harriet Baker*
"Differential Expression of Neuropeptides and Proteins in Closely Related Species"

9:10 *Alice S. Powers*
"Some New Ideas about the Function of the Dorsal Cortex in Turtles"

9:30 *Gregory Ball*
"Neurochemical Cartography of the Oscine Brain: A Tale of Two Systems"

9:50 COFFEE

10:15 *Enrique Font*
"Neurotoxic Effects of MPTP in the Lizard, *Anolis carolinensis*: Evidence for a Nigrostriatal Projection"

10:35 *Terry Takahashi*
"Parallel Auditory Pathways in the Barn Owl: An Overview"

Catherine Carr
"Parallel Auditory Pathways in the Barn Owl: Immunohistochemistry"

Susan F. Volman
"Comparative Physiology and Anatomy of Sound Localization Pathways in Owls"

11:15 *Robert R. Capranica*
"How Small Animals Can Localize Low Frequency Sounds"

11:30 LUNCH BREAK

1:00 *Walter K. Metcalfe, Bill Trevarrow, and Charles B. Kimmel*
"Segmental Organization of the Central Nervous System in a Vertebrate"

1:20 *Donald J. Stehouwer*
"Encephalization and Metamorphosis of Behavior in the Bullfrog (*Rana catesbeiana*)"

1:40 *William L. R. Cruce*
"The Sea-Rat: A Comparison of the Reticular Formation in a Guitarfish and a Rat with Some Speculations on Evolution"

2:00 *Claudia Blair*
"Facial Muscles and Facial Motor Units: Comparative Studies in Speech?"

2:20 *Michael B. Pritz*
"Thalamic Nuclei that Project to Reptilian Telencephalon Lack Intrinsic Neurons"

2:40 *H.-P. Lipp*
"The Forebrain as a Playground of Mammalian Evolution"

3:00 COFFEE

3:30 *Ichiro Fujita, Peter W. Sorensen, Toshiaki J. Hara, and Norman E. Stacey*
"Olfactory System, But Not Terminal Nerve, Carries Sex Pheromone Information"

3:50 *Mark Ronan and David Bodznick*
"Skin Photoreception in Vertebrates"

4:10 *Mary Hagedorn, Thomas Finger, and Walter Heiligenberg*
"Synodontid Catfish, A New Group of Weakly Electric Fish: Possible Clues to the Evolution of the Electric System"

4:30 *Scott N. Currie and Paul S. G. Stein*
"Stimulation of the Ventral-Posterior Pocket Cutaneous Nerve in the Spinal Turtle: Multisecond Excitability Changes in the Pattern Generating Circuitry for Scratch Reflexes"

4:50 *Jagmeet S. Kanwal*
"How the Catfish Tracks Its Food: Gusto-Modulated Reticulospinal Neurons..."

5:10 BUSINESS MEETING

5:30 COCKTAIL & SOCIAL HOUR
(Hors d'oeuvres and Cash bar)

THE 1988 PROGRAM COMMITTEE

Dolores M. Schroeder
Anatomy Section
Indiana University School of Medicine
Bloomington, IN 47405

Anton Reiner
Department of Anatomy and Neurobiology
University of Tennessee
Memphis, TN 38163

Andrew H. Bass
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Cornell University
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Secretary Treasurer
Mary Sue Northcutt
SIO Neurobiology Unit & Department of Neurosciences
University of California, San Diego
La Jolla, CA 92093

1988--J. B. JOHNSTON CLUB PROGRAM--1988

Sunday, November 13, 1988

Toronto, Ontario

Sheraton Centre Hotel

Dominion Ballroom North

8:30 COFFEE AND ROLLS (Dominion Ballroom South)

9:00 *Philip S. Ulinski*
"Intrinsic Organization of Turtle Visual Cortex"

9:20 *Wally Welker*
"Determinants of Cortical Gyri and Sulci"

9:50 *Arnold R. Kriegstein and Mark G. Blanton*
"Cellular and Synaptic Physiology of Turtle Cortex during Early Stages of Embryonic Development"

10:10 COFFEE (Dominion Ballroom South)

10:30 *Special Invited Lecture*
"Species Universals in Birdsong and their Implications for Vocal Learning Theory"
by Peter Marler, Rockefeller University

11:30 LUNCH BREAK

1:00 *David Ingle*
"New Functions for the Frog's Striatum"

1:20 *Douglas C. Fitzpatrick*
"The Laminar Anatomy of the Mustached Bat's Auditory Cortex"

1:40 *N. Kuwabara and N. Suga*
"A Possible Mechanism for the Target Range Information Processing in the Mustached Bat"

2:00 *Robert W. Williams*
"A Structural Comparison of the Visual System of Spanish Wildcats (*Felis silvestri tartessia*) and Domestic Cats"

2:20 *Curtis Bell and Kirsty Grant*
"Morphophysiology of Axonal Arbors"

2:40 COFFEE (Dominion Ballroom South)

3:00 *R. Glenn Northcutt*
"Genetic and Ontogenetic Clues to the Phylogeny of Lateral Line Receptors"

3:40 *Carl M. Rovainen*
"Brain Angiogenesis in *Xenopus*"

4:00 *Steven Zottoli*
"Supramedullary Neurons or Are They?"

4:20 *Craig W. Hawryshyn*
"Ontogeny of UV Polarized Light Sensitivity"

4:40 *Peter M. Narins*
"A Novel Input to the Frog Ear"

5:10 BUSINESS MEETING

5:30 **COCKTAIL & SOCIAL HOUR**
(Hors d'Oeuvres and Cash Bar)
Dominion Ballroom South

The J. B. Johnston Club

Saturday, October 28, 1989 --Phoenix Ballroom

FIRST ANNUAL KARGER WORKSHOP

COMPARATIVE NEUROBIOLOGY: PROBLEMS FOR A NEW DECADE

8:00 *Opening Remarks*
R. Glenn Northcutt

Molecular Evolution of Neuropeptids
Robert M. Dores

Histochemical Strategies in the Study of Neural Evolution
Steven E. Brauth

Why Are There 500 Species of Hawaiian Drosophila? A Neuroethologist's View
Ronald R. Hoy

11:00 Lunch Break

1:00 *Ontogenetic Clues to Neural Phylogeny*
R. Glenn Northcutt

Brains, Bodies and Oxygen
Este Armstrong

Neuroethological Approaches to the Evolution of Neural Systems
Susan F. Volman

4:00 *Summary, Discussion and Closing Remarks*
Moderators: C. B. G. Campbell & Walter Wilczysnki

Please note that presentation times are approximate. Coffee service for JBJC members will be available throughout the day in Curtis A&B, and a cash bar/social hour will be held there from 5:00 until 6:00 on Saturday. *(Curtis A&B is to the right as you exit the Phoenix Ballroom; Russell A,B&C--where coffee and the socializer will be located on Sunday-- is to the left.)*

The J. B. Johnston Club

Sunday, October 29, 1989 -- Phoenix Ball room

ANNUAL MEETING

8:00 COFFEE AND ROLLS (Russell A,B&C)

8:30 *Bernd U. Budelmann*
"The Lateral Line: an Invertebrate Way of Doing It"

8:50 *Albert S. Feng*
"How Frog Brains Are Organized for Analysis of Complex Sounds -- a Comparative View"

9:10 *Catherine Carr*
"Comparative Neuroanatomy of the Brainstem Auditory Pathways in Owls"

9:30 *Christopher von Bartheld*
"The Paratympanic Organ: a Barometer in the Middle Ear of Birds?"

9:50 COFFEE (Russell A,B&C)

10:10 *Bill Trevarrow*
"Overall Segmental Plan of Embryonic Brains and Its Possible Evolutionary Origins"

10:40 *Bernd Fritzsch*
"Plasticity in the Pattern of Craniate Eye Muscle Innervation"

11:00 *Paul D. R. Gamlin*
"Inappropriate Neural Signals in the Oculomotor System of Primates"

11:20 *Jeffery Woodbury*
"A Taxonomic Study of the Dorsal Horn in Birds"

11:40 LUNCH BREAK

1:00 *David A. Holtzman, Evan Gordon and Mimi Halpern*
"Metabolic Responses and Developmental Changes in the Main and Accessory Olfactory Systems of Embryonic Garter Snakes"

1:20 *Ellengene H. Peterson*
"How Animals Move Fast"

1:40 *Kiisa C. Nishikawa*
"Evolution of Feeding Motor Patterns in Amphibians"

2:00 *Gunther K. H. Zupanc*
"Neuronal Plasticity in the Prepacemaker of *Eigenmannia*: a Morphological Substrate for Seasonal Behavioral Modifications"

2:20 COFFEE (Russell A,B&C)

2:40 *Heather L. Eisthen*
"Evidence for a Vomeronasal System in Ambystomids: Implications for Evolution and Function in Aquatic Animals"

3:00 *Aldo Fasolo*
"Chemical Neuroanatomy of the Hypothalamus in Urodele Amphibians and Its Bearing for Evolutionary Inference"

1:00 *Paul Grobstein*
"An Abstract Spatial Representation in the Sensorimotor Interface in Frogs"

3:40 *Caroly A. Shumway*
"From Electric Fish to Mammals: a Comparative Look at Multiple Sensory Maps"

4:00 *Helen Sherk*
"Optical Flow and Directional Preference in Extrastriate Cortex"

4:20 BUSINESS MEETING

5:00 **JBJC SOCIALIZER** (Russell, A,B&C)

NOTES

The J. B. Johnston Club

Saturday, October 27, 1989
Room 29 (morning) and St. Louis Ballroom D (afternoon)

SECOND ANNUAL KARGER WORKSHOP

A CONTEMPORARY ASSESSMENT OF THE CONCEPT OF HOMOLOGY AS A TOOL IN MODERN NEUROSCIENCE

8:30 Opening Remarks
Harriet Baker

Biological Hierarchies and the Concept of Homology
R. Glenn Northcutt and Georg Striedter

Homology as a Process Rather than an Outcome
Drew Noden

Tracing the Pedigree of a Novel Locomotory Behavior by Comparing Motor Patterns, Muscles, and Neurons in the Sandcrab Emerita and Some of Its Relatives
Dorothy H. Paul

11:30 Lunch Break

1:00 Does Morphological Homology Predict Function or Behavior?
Andrew H. Bass

Interpretation of Species Specific Biochemical Variation in Identified Neurons
Harriet Baker

Comparative Anatomy and Homologies: Equal Parts of Methods, Intuition and Madness
Harvey J. Karten

4:00 Summary, Discussion and Closing Remarks

Please note that presentation times are approximate. Coffee service for JBJC members will be set up in Room 29 during the morning; the afternoon coffee break will take place in the back of the meeting room (St. Louis D). A short reception and cash bar will be held at 5:00 in Room 28.

Note: The year on this program is incorrect, this is the 1990 program. The date was mistakenly not changed from the previous year.
-Daniel Hoops, 2021

The J. B. Johnston Club

Sunday, October 28, 1990 -- Promenade Ballroom D

ANNUAL MEETING

8:30 COFFEE AND ROLLS (Promenade E)

9:00 Arthur Grant
"Origin of Electric Signals in the Tectal Neuropil of Frogs"

9:20 Linda J. Larson-Prior
"Slow but Sure: Novel Synaptic Potentials in the Cerebellum of Turtles"

9:40 William M. Saidel
"A House of Cards: Evolutionary Considerations on Utricular Structure"

10:00 Robert C. Eaton and James G. Canfield
"Sound Pressure and Displacement Determine the Onset Time and Direction of the Mauthner-Initiated Escape Response"

10:20 COFFEE

10:40 Werner Graf
"Comparative Anatomy and Physiology of the Head Movement System of Vertebrates"

11:00 Thomas E. Finger
"Postlarval Growth of the Peripheral Gustatory System in Catfish: Big Fish Have More Nerve Fibers and Many More Receptors"

11:20 Special Guest Lecture
"Why Do Chickens Have Placodes?"
Drew Noden (Special Participant--Second Annual Karger Workshop)

12:00 LUNCH BREAK

1:30 Joseph P. Rauschecker
"Compensatory Plasticity in Visually Deprived Animals"

1:50 David A. Yager
"Patterns of Auditory Structure and Function within the Suborder Mantodea (Praying Mantises)"

2:10 Masashi Kawasaki
"'Chirps' Are Produced by Homologous Neuronal Substrates in Different Genera of Gymnotiform Electric Fish"

2:30 Laura Bruce and Timothy J. Neary
"Hypothalamic Afferents in the Lizard Gekko gecko: Comparisons with Amphibians and Mammals"

2:50 COFFEE

3:10 Matthew S. Grober and Andrew H. Bass
"Neural Consequences of Alternative Reproductive Tactics in Teleost Fishes: LHRH-Positive Preoptic Cells

3:40 Toshitaka Oka
"Dwarf Gourami as a Material for Multidisciplinary Study of the Terminal Nerve System"

4:00 Thomas Szabo
"The Olfactoretinalis System -- Terminal Nerve?"

4:20 COFFEE

4:40 John D. Pettigrew
"Crocodilian Visual Cortex"

5:00 Michael B. Pritz
"A Different Type of Amniote Thalamic Organization"

5:20 Toru Shimizu
"Concurrent Processing in the Telencephalon: A Bird's Eye View"

The J. B. Johnston Club

Saturday, November 9, 1991
Orleans Ballroom

THIRD ANNUAL KARGER WORKSHOP

MULTIPLE APPROACHES TO EFFECTOR SYSTEMS

8:30 *Opening Remarks*
Catherine Carr

"Muscle Architecture and Control Demands"
Carl Gans (Special Invited Guest)

"Evolution of Spinal Motor Networks"
Joseph Fetcho

"Transformations in the Neural Code for Head Movement"
Thomas Masino

11:30 Lunch Break

1:00 *"Biochemical and Evolutionary Pressures on Control of Locomotion"*
Avis Cohen

"The Evolution of Neural Circuits Controlling Feeding Behavior in Frogs"
Kiisa Nishikawa

"Patterns of Organization of Chromatomotor Systems"
Leo S. Demski

4:00 *Summary, Discussion and Closing Remarks*

Please note that presentation times are approximate. Coffee service for JBJC members will begin at 7:30 in the Foyer outside the Ballroom and will continue throughout the day. A short reception for workshop participants and attendees will be held immediately after the workshop (5:00) in the Patio Suite.

The J. B. Johnston Club

Sunday, November 10, 1991 - Orleans Ballroom

ELEVENTH ANNUAL MEETING

8:00	COFFEE AND ROLLS (Foyer of Ballroom)
8:30	*Robert M. Dores and Lorraine K. McDonald* **"Detection of Enkephalin-Related Products in the Brain and Pituitary of Lampreys: Speculations on the Origins of Proopiomelanocortin"**
8:55	*Yoshitaka Oka* **"The Terminal Nerve GnRH Cells May Serve as a Neuromodulator"**
9:20	*Richard C. Francis and Russell D. Fernald* **"Socially Induced Changes in Gondotropin-Releasing-Hormone-Containing Neurons in the Forebrain of *Haplochromis burtoni*"**
9:45	COFFEE
10:10	*S. O. E. Ebbesson, P. Ekstrom, T. Ostholm, and L. Ebbesson* **"Brain Development during the Midlife Smolt Transformation in Coho Salmon"**
10:35	Special Guest Lecture **"Evolution of Limblessness in Lepidosaurians"** by *Carl Gans* (Special Participant--Third Annual Karger Workshop)
11:30	LUNCH BREAK

1:30 *Heinrich A. Vischer*
"Developmental Patterns of the Electrosensory System in a Weakly Electric Fish, *Eigenmannia*"

1:55 *William E. Bemis and R. Glenn Northcutt*
"Development of the Lateral Line System of the Paddlefish, *Polyodon spathula* (Acipenseriformes: Polyodontidae)

2:20 *Mario F. Wullimann*
"Comparative Neurobiology and Biogeography: A Viable Marriage?"

2:45 COFFEE

3:10 *Curtis W. Anderson*
"Neural Circuits Controlling Feeding Behavior in the Frog *Rana pipiens*"

3:35 *Takatoshi Nagai*
"Organization of the Glossopharyngeal Ganglion in the Mexican Salamander, Axolotl: An Undifferentiated Form Compared with Other Vertebrates"

4:00 COFFEE

4:25 *Leah Krubitzer*
"The Organization of Isocortex in the Flying Fox: Insights into the Evolution of the Complex Sensory Systems"

4:50 *Robert Capranica and Frank Dodd*
"New Views of the Response Properties of Auditory Nerve Fibers: Are Tuning Curves and Q Values Useful?"

5:15 BUSINESS MEETING

5:30 **JBJC SOCIALIZER** (Patio Suite and Poolside)

The J. B. Johnston Club

Saturday, October 24, 1992
Pacific Ballroom

FOURTH ANNUAL KARGER WORKSHOP

THE NEUROBIOLOGY OF REPRODUCTIVE BEHAVIOR

8:30 Opening Remarks

Linda Muske and Leo Demski

"The 'Organizational' Concept and Vertebrates without Sex Chromosomes"

David Crews

"Amphibian Models for Studying Gonadotropin Hormone-Releasing Hormone (GnRH) Neuronal Systems"

Linda Muske

"Sexual Differentiation of the Brain and Behavior: The Zebra Finch Is Not Just a Flying Rat"

Arthur Arnold

12:00 Lunch Break

1:30 *"Weakly Electric Fish as Model Systems to Study the Action of Gonadal Steroids"*

Harold Zakon

"Neural Systems Linking Social and Environmental Cues to Reproductive Physiology and Behavior in Frogs"

Walter Wilczynski

"Neurobiology of Sex Pheromone Systems in Goldfish"

Joseph Dulka

5:00 Summary, Discussion and Closing Remarks

Please note that presentation times are approximate. Coffee service for JBJC members will begin at 7:00 in Poppy's Pub, just outside the Ballroom, and will continue throughout the day. A short reception for workshop participants and attendees will be held immediately after the workshop (6:00) on the Patio.

The J. B. Johnston Club

Sunday, October 25, 1992 - Pacific Ballroom

TWELTH ANNUAL MEETING

8:00 COFFEE AND ROLLS (Poppy's Pub)

9:00 *Robert Baker and Ed Gilland*

"The Segmental Variation of Cranial Sensory-Motor Nerves in the Developing Hindbrain May Help to Establish the Correspondence Between Gene Expression and Neuronal Phenotype"

9:30 *R. Glenn Northcutt and William E. Bemis*

"Cranial Nerves of the Coelacanth, *Latimeria chalumnae*"

10:00 COFFEE

10:30 *William P Hayes*

"A Simple Model for the Diversification of Neuropeptide Phenotypes in Embryonic *Xenopus* Brain"

11:00 Special Guest Lecture

"Evolution of Behavioral Controlling Mechanisms"

by *David Crews* (Special Participant--Fourth Annual Karger Workshop)

12:00 LUNCH BREAK

1:30 *James Albert*

"Sources of Variation in the Evolution of a Sensory System: Siluriform Electroreception"

2:00 *Ruth A. Conley*

"The Electrosensory Brainstem of Fishes and the Auditory Brainstem of Mammals: Striking Analogies Between Non-Homologous Structures"

2:30 *Zoltan M. Fuzessery*

"Neural Specializations for the Simultaneous Processing of Active and Passive Hearing in a Gleaning Bat: Must There Be Anatomical Segregation?"

3:00 COFFEE

3:30 *Ellengene H. Peterson*

"Vestibular Hair Cells: Why do We Need More Than One Type?"

4:00 *Walter Woodson and Harvey Karten*

"Centrifugal Projections Upon the Retina in the Pigeon *Columba livia*: Their Possible Role in Stabilization of Gaze"

4:30 *Carl Rovainen*

"What Are the Roles of Blood Flow and Adenosine for the Growth and Remodeling of Blood Vessels in Developing Brain?"

5:00 BUSINESS MEETING

6:30 **JBJC SOCIALIZER** (Pacific Ballroom and Patio)

The J. B. Johnston Club

Saturday, November 6, 1993
Wintergarden Room

FIFTH ANNUAL KARGER WORKSHOP

AVIAN AUDITORY-VOCAL MOTOR INTERFACES

Organized by William S. Hall and Steven E. Brauth

8:30	Opening Remarks **William S. Hall**
	*"Functional Anatomy of Forebrain Auditory Pathways in Budgerigars (*Milopsittacus undulatus)" **Steven E. Brauth**
	"The Neurology of the Auditory-Vocal-Respiratory Axis in Songbirds and Non-Songbirds" **J. Martin Wild**
	"Comparative Studies of Neurotransmitter Receptors in Vocal Control Nuclei" **Gregory F. Ball**
12:00	Lunch Break
1:30	*"Functional Organization and Sensorimotor Integration in the Song System of Songbirds"* **Daniel Margoliash**
	"Auditory Input to the Vocal Motor Systems in Birds" **David S. Vicario**
	"Recent Advances in Birdsong Neurobiology: Synthesis and Overview" **Masakazu Konishi**
5:00	Discussion and Closing Remarks **William S. Hall**

Please note that presentation times are approximate. Coffee service for JBJC members will begin at 7:00 in the Lincoln Room and continue throughout the day. A short reception for workshop participants and attendees will be held immediately after the workshop (6:00) in the Continental Room.

The J. B. Johnston Club

Sunday, November 7, 1993
Wintergarden Room

THIRTEENTH ANNUAL MEETING

7:00	COFFEE AND ROLLS (Lincoln Room)
8:00	*Bernd Fritzsch* **"(Re)Organization of the Vestibulo-Ocular Reflex System in Vertebrates"**
8:30	*Hermann Wagner and Barrie Frost* **"Characteristic Delay and Characteristic Disparity: Concepts for Binaural and Binocular Matching"**
9:00	*David Holtzman, Sandra Grellinger, and Elizabeth Bostock* **"Spatial Learning and Memory in Snakes"**
9:30	COFFEE
10:00	*Jiakun Song and Arthur N. Popper* **"Hair Cells in the Mechanosensory Lateral Line Receptors: Evidence of Two Types Based on Ototoxicity Sensitivity"**
10:30	*Duane E. Haines* **"A Window to the Mind of John Black Johnston"**
11:00	Special Guest Lecture **"The Development of Gender Differences in the Song System"** by *Masakazu Konishi* (Special Participant-- Fifth Annual Karger Workshop)
12:00	LUNCH BREAK

1:30	*Roger Reep* **"Layer VII of Mammalian Isocortex"**
2:00	*Georg F. Striedter* **"Evolution of the Neural Circuits Mediating Vocal Control and Vocal Learning in Birds"**
2:30	*Mark R. Braford, Jr.* **"A New Analysis of Telencephalic Development and Organization in Teleost Fishes and Its Comparative Implications"** (Please note: corrected title)
3:00	COFFEE
3:30	*Steven J. Zottoli and Ernst-August Seyfarth* **"Julia B. Platt (1857 - 1935): Achievements and Disappointments of a Pioneer Comparative Embryologist and Neuroscientist"**
4:00	*Robert M. Gould* **"Myelination in *Squalus acanthias*"**
4:30	*Leo S. Demski and R. Glenn Northcutt* **"Great White Shark: Big Nose, Moderately Developed Brain! What Does It Mean?"**
5:00	BUSINESS MEETING
5:45	**JBJC SOCIALIZER** (Continental Room) (Please note: room and time have been changed)

The J. B. Johnston Club

Saturday, November 12, 1994
La Playa Ballroom Room

SIXTH ANNUAL KARGER WORKSHOP

EVOLUTION OF THE FOREBRAIN
(Organized by Mark R. Braford, Jr.)

7:00 Coffee and Rolls (Brassie's Lounge)

8:00 Opening Remarks
Mark R. Braford, Jr.

"The Forebrain of Gnathostomes: In Search of a Morphotype"
R. Glenn Northcutt

"Thalamotelencephalic Pathways in Ray-Finned Fishes and Their Interpretation in a Comparative Context"
Mark R. Braford, Jr.

A Thalamic Roundtable

"The Thalamus of Reptiles and Mammals: Similarities and Differences"
Michael B. Pritz

"The Dorsal Thalamus of Jawed Vertebrates: A Comparative Viewpoint"
Ann B. Butler

"Why Has the Ventral Geniculate Been with Us for So Long and What Does It Do?"
Harvey J. Karten

12:00 Lunch Break

1:30 "A Segmental Morphological Paradign for the Understanding of Forebrain Pattern in Vertebrates"
Luis Puelles (*Special Invited Guest*)

"The Organization of the Basal Ganglia in Different Vertebrates and Its Evolutionary Implications"
Loreta Medina

"The Limbic System of Tetrapods: A Comparative Analysis of Cortical and Amygdalar Populations"
Laura L. Bruce and **Timothy J. Neary**

"The Origin and Evolution of Mammalian Isocortex"
Jon H. Kaas

Discussion and Closing Remarks
Mark R. Braford, Jr.

5:30 Reception (Poolside)

Notes:

The J. B. Johnston Club

Sunday, November 13, 1994
La Playa Ballroom

FOURTEENTH ANNUAL MEETING

7:00	COFFEE AND ROLLS (Brassie's Lounge)
8:00	*Joseph R. Fetcho and Donald M. O'Malley* **"Imaging of Neural Activity Populations of Identified Neurons in Intact Living Zebrafish"**
8:30	*Barbara L. Finlay and Richard B. Darlington* **"A Model for the Metamorphosis of Mice to Men: Developmental Structure in the Allometry of Brain Parts"**
9:00	*Alice S. Powers* **"Susanna Phelps Gage: A Woman Neuroscientist at the Turn of the Century"**
9:30	*Matthew S. Grober* **"A Cladistic Analysis of GnRH Evolution: Multiple Forms and Multiple Functions?"**
10:00	COFFEE
10:20	*Harold Zakon* **"Birth, Death, and Identity Crisis in the Electrosensory Periphery"**
10:50	Special Guest Lecture **"Rhombomeres Produce Specific Components of the Longitudinal Nuclear Columns of the Hindbrain in Birds: A Chimera-Derived Fate Map** by *Luis Puelles* (Special Participant -- Sixth Annual Karger Workshop) and Faustino Marín
11:30	IN MEMORIAM: **Walter Heiligenberg and Thomas Szabo**
12:00	LUNCH BREAK

1:30	*P.J. Sharp* **"Neural Loci and Circuits Mediating the Onset of Incubation Behavior in Birds"**
2:00	*Susan F. Volman* **"Hippocampal Volume and Food Storing in Woodpeckers"**
2:30	*Giancarlo Panzica and Jacques Balthazart* **"Steroid-Induced Neuronal Plasticity in Quail Medial Preoptic Nucleus, A Brain Center Involved in the Control of Male Sexual Behavior"**
3:00	*John H. Casseday* **"A Neuroethological Theory of the Operation of the Inferior Colliculus"**
3:30	COFFEE
4:00	*Peter M. Narins* **"Temperature-Dependence of Auditory Function in Frogs"**
4:30	*Curtis Anderson and Kiisa C. Nishikawa* **"The Effects of Sensory Information on Motor Program Choice in Frogs"**
5:00	*Paul R. Manger and John D. Pettigrew* **"Directional Detection of Electrical Stimuli by the Platypus: Behavior, Anatomy, Physiology and Ontogeny of a `Biological Antenna'"**
5:30	BUSINESS MEETING
6:00	JBJC SOCIALIZER (Pool Area)

The J. B. Johnston Club

Friday, November 10, 1995
Pacific Ballroom

SEVENTH ANNUAL KARGER WORKSHOP

AGNATHAN NEUROBIOLOGY

(Organized by Carl Rovainen)

7:00 Coffee and Rolls (Pacific Ballroom)

8:00 Opening Remarks -- **Carl Rovainen**

"Raiders of the Lost Ark: the Origin of Craniates and Living Agnathans" -- **R. Glenn Northcutt**

"The Brains of Lampreys and Hagfishes Compared: How to Frustrate a Cladist" -- **Helmut Wicht**

"The Sensory Biology of Living Jawless Fishes: - **Christopher Braun**

"Retinopetal Projections in Lampreys" -- **Nicolai Vesselkin** (Special Invited Guest)

12:00 Lunch Break

1:30 "Segmental Hindbrain Organization in Embryonic and Larval *Petromyzon*: Comparisons with Gnathostomes and Hints about Primitive Vertebrates" -- **Ed Gilland**

"Spinal Interneurons and Their Roles in Swimming Activity in Lampreys" -- **James T. Buchanan**

"Feeding and Breathing in Lampreys" -- **Carl Rovainen**

DISCUSSION

5:30 Reception (Porthole Room)

The J. B. Johnston Club

Saturday, November 11, 1995
Pacific Ballroom

FIFTEENTH ANNUAL MEETING

7:00 COFFEE AND ROLLS (Pacific Ballroom)

8:00 Kenneth C. Catania
"The Sensory Biology of the Star-Nosed Mole"

8:25 Craig Hawryshyn
"Neuroethological Perspectives on Ultraviolet-Polarization Vision in Fish"

8:50 Cliff H. Summers
"*In Vivo* Dialysis of Serotonin from Hippocampal Cortex of *Anolis carolinensis*"

9:15 COFFEE

9:45 Brian Rasnow, Chris Assad, and Philip K. Stoddard
"Electric Organ Discharge Maps of Weakly Electric Gymnotiform Fish"

10:10 Manuel A. Pombal
"Identification of the Striatum and Its Inputs, and the Role of the Ventral Thalamus in the Control of Reticulospinal Neurons and Locomotion in Lampreys"

10:35 Special Guest Lecture
"Excitatory and Inhibitory Amino Acids in the Spinal Cord and Brain Synapses of Lampreys"
by *Nicolai Vesselkin* (Special Participant – Seventh Annual Karger Workshop)

11:15 LUNCH BREAK

1:00 Mimi Halpern
"Is There a Dual Accessory Olfactory System?"

1:25 Aldo Fasolo
"Transient Neuronal Populations in the Vomeronasal Organ of Embryonic Mice"

1:50 Barbara S. Zielinski
"Early Development of Olfaction in the Sea Lamprey, *Petromyzon marinus*"

2:15 COFFEE

2:30 Bernd Fritzsch
"The Periphery Enslaves the Brain: the Impact of Research in Neurotrophins for an Understanding of Octavolateral Organ Development and Function"

2:55 Günther K. H. Zupanc
"Neurogenesis in the Adult Brain: the Central Posterior/Prepacemaker Nucleus of Weakly Electric Gymnotiform Fish as a Model System for Studying Structural Neuronal Plasticity"

3:20 Wil J. A. J. Smeets
"Phylogeny and Development of Catecholamine Systems in the CNS of Vertebrates"

3:45 COFFEE

4:00 Leo S. Demski
"Forebrain Enlargement in Bony Fishes: A Preliminary Analysis of Phyletic Trends and Ecomorphological Considerations"

4:30 Andres Collazo
"Reexamining the Developmental Criterion for Morphological Homology"

4:55	Anton Reiner **"If the Big Meteor Had Not Hit 65 Million Years Ago, Would Humanoid Dinosaurs Be Holding J. B. Johnston Club Meetings and Discussing the Superiority of the DVR over Neocortex?"**
5:25	BUSINESS MEETING
6:00	**JBJC RECEPTION (Ferryboat Berkeley)**

The J. B. Johnston Club

Friday, November 15, 1996
Ambassador Room

EIGHTH ANNUAL KARGER WORKSHOP

EVOLUTION OF SENSORY SYSTEMS

(Organized by Arthur N. Popper and Richard R. Fay)

7:00 **Coffee and Rolls (Lincoln Room)**

8:00 **Opening Remarks -- Dr. Arthur N. Popper and Dr. Richard R. Fay**

"Evolution of Tetrapod Ears: What the Fossils Can, Can't, and Could One Day Tell Us" -- Dr. Jennifer A. Clack (Special Invited Guest)

"Evolution of Taste and Solitary Chemoreceptor Systems" -- Dr. Thomas E. Finger

"Evolution of Vertebrate Olfactory Systems" -- Dr. Heather L. Eisthen

"Evolution of the Eye in Vertebrates" -- Dr. Russell D. Fernald

12:00 **Lunch Break**

1:30 **"Evolution of Electrosensory Systems" -- Dr. John G. New**

"Evolution of the Octavolateralis System: -- Dr. Arthur N. Popper and Dr. Richard R. Fay

"Evolution of Sensory Pathways in Vertebrate Brains" -- Dr. William Hodos and Dr. Ann B. Butler

DISCUSSION

5:30 **Reception (Continental Room)**

The J. B. Johnston Club

Saturday, November 16, 1996
Ambassador Room

SIXTEENTH ANNUAL MEETING

7:00 COFFEE AND ROLLS (Lincoln Room)

8:00 Horst Bleckmann
"Infrared Reception in the Forest-Fire Detecting Beetle *Melanophila*"

8:25 Andreas Elepfandt
"Hearing and Acoustical Communication Under Water in the Clawed Frog, *Xenopus l. laevis*"

8:50 Gerhard Schlosser
"Retinal Development Is Altered in Directly Developing Frogs"

9:15 Matthew Friedman and Masashi Kawasaki
"Calretinin Immunoreactivity in Mormyrid and Gymnarchid Electrosensory and Electromotor Systems"

9:40 COFFEE

10:10 Werner Graf
"Movement Detection in Three-Dimensional Space: Convergent Evolution of Labyrinth Geometry in Vertebrates and Invertebrates"

10:35 Martin Wild
"Introducing the 'Avunculus': A Coherent Beak and Body Map in the Brain of the Budgerigar, and Evidence for a Novel Organization of Somatosensory Projections to the Forebrain"

11:00 David Bodznick
"A Functional Role of Parallel Fiber Systems in Sensory Processing"

11:25 Special Guest Lecture
"Senses of the Fish-Tetrapod Transition"
by *Jennifer Clack* (Special Participant -- Eighth Annual Karger Workshop)

12:05 LUNCH BREAK

2:00 Fernando Martínez-García and Enrique Lanuza
"Evolution of the Associative Telencephalon: Multimodal Convergence in the Posterior DVR of Reptiles"

2:25 Oscar Marín, Agustín González, and Wil J. A. J. Smeets
"Basal Ganglia Organization in Amphibians: The State of the Art"

2:50 Ann B. Butler and William M. Saidel
"Truth in Biology: Homology and Syngeney"

3:15 COFFEE

3:45 R. Glenn Northcutt
"Cortices, Ontogenies and Paradigms"

4:15 Zen Faulkes and Dorothy H. Paul
" 'New' Behaviors as Evolutionary Mosaics"

4:40 Matthew Grober and Andrew Bass
"From Environmental Variation to Neurochemical Divergence: Comparative Insights into Sexual Polymorphism in Vertebrates"

4:45 Roger L. Reep and Christopher D. Marshall
"You Are How You Eat: Feeding Ecomorphology Exemplified in Florida Manatees"

5:15 Business meeting

6:00 **JBJC RECEPTION** (Continental Room)

The J. B. Johnston Club

Friday, October 24, 1997
Ballroom, Bourbon Orleans

NINTH ANNUAL KARGER WORKSHOP

DEVELOPMENT AND EVOLUTION

(Organized by Timothy J. Neary and Bernd Fritzsch)

7:00 Coffee and Rolls (Patio Suite -- Adjoining the Courtyard)

8:00 Opening Remarks -- **Timothy J. Neary**

"Molecular Evolution of Brain Development" -- **Peter W. H. Holland**

(Special Invited Guest)

"Evolution and Functional Roles of Higher Brain Centers in Arthropods" -- **Nicholas Strausfeld**

"Of Mice and Molecules: Ontogeny and Evolution of the Hindbrain and Ear" -- **Bernd Fritzsch**

12:00 Lunch Break

1:30 "Development and Evolution of the Telencephalon in Birds: -- **Georg Striedter**

"Patterns of Vertebrate Neurogenesis and the Paths of Vertebrate Evolution" -- **Barbara Finlay**

"Hierarchical Homology Analysis" -- **William Trevarrow**

DISCUSSION

5:30 Reception (Patio Suite – Adjoining Courtyard)

The J. B. Johnston Club

Saturday, October 25, 1997
Ballroom, Bourbon Orleans

SEVENTEENTH ANNUAL MEETING

7:00	COFFEE AND ROLLS (Patio Suite -- Adjacent to the Courtyard)
8:00	Catherine E. Carr and M. Fabiana Kubke **"Evolution and Development of the Brainstem Time-Coding Nuclei of the Barn Owl"**
8:25	Peter Narins **"Frog Ears Revisited: Mass as a Tuning Element in a West African Frog?"**
8:50	Wolfgang Plassmann **"No Gain without a Loss: Inner Ear, Hearing Range and Adaptation"**
9:15	Arthur Popper and Zhongmin Lu **"Moths, Herring and Hearing"**
9:40	COFFEE
10:05	Paul Manger, Zoltan Molnar, Daniel Slutsky, and Leah Krubitzer **"Physiological Subdivisions of Visually Responsive Regions of the Telencephalon of the Iguana"**
10:30	William Hodos and M. M. Ghim **"Visual Contrast Sensitivity in Vertebrates"**
10:55	Special Guest Lecture **"Molecular Evolution of the Neural Crest"** by *P. W. H. Holland* (Special Participant -- Ninth Annual Karger Workshop)
11:35	LUNCH BREAK
1:35	Mark Deutschlander and J. B. Philips **"Towards the Discovery of the Neural Basis of Geomagnetic Compass Orientation in a Vertebrate"**
2:00	Joseph G. Dulka, Kate M. French and Joseph P. Kokenge **"A Departure from Conventional Thinking: Behaviorally Evoked Yodeling and the Central Regulation of Electric Organ Frequency Modulations in Brown Ghost Knifefish"**
2:25	Sarah A. Dunlop and Lyn D. Beazley **"Optic Nerve Regeneration"**
2:50	Aldo Fasolo **"Carnosine: An Evergreen Peptide of Vertebrate Excitable Tissue"**
3:15	COFFEE
3:40	Joel Glover **"Comparative Aspects of Reticulospinal Organization"**
4:05	Zoltan Molnar and Patricia Cordery **"Common Algorithms of Development in the Pallium of Mammals and Reptiles"**
4:30	Philipe Vernier **"Origin and Evolution of Dopamine D_1 Receptors in Vertebrates"**
4:55	Business meeting
5:30	**JBJC RECEPTION** (Cocktails will be served immediately after the business meeting in the Patio Suite and Courtyard; the reception will follow in the Ballroom at 7:00)

The J.B. Johnston Club

Radisson Wilshire Plaza Hotel, Los Angeles, CA

Saturday Afternoon, November 7, 1998

1:45 ***Matt Grober***
"Brain, Behavior and Evolution: Who's on first, What's on second, I don't know is on third?"

2:15 ***Ann B. Butler and William M. Saidel***
"The Curious Nucleus Rostrolateralis of Ray-finned Fishes"

2:45 ***Alino Martinez-Marcos, Enrique Lanuza, and Mimi Halpern***
"Chemosensory Pathways to the Hypothalamus of the Garter Snake, *Thamnophis sirtalis*"

3:15 COFFEE

3:45 ***Peggy L. Edds-Walton***
"Directional Auditory Afferent Input to the Medulla of the Toadfish, *Opsanus tau*: Who, What, Where, and Why?"

4:15 ***John D. Crawford***
"Hearing and Auditory Computation in Electric Fish"

4:45 ***Leo S. Demski***
"Patterns in the Evolution of the Visual Telencephalon of Actinopterygians: Cognitive Mapping by a 'Fishy Cortex'"

5:15 BUSINESS MEETING

6:00 JBJC RECEPTION

1998 – PROGRAM -- 1998

J.B. JOHNSTON CLUB

Friday and Saturday, November 6-7, 1998

Radisson Wilshire Plaza Hotel

3515 Wilshire Boulevard

Los Angeles, CA 90010

The J.B. Johnston Club

Plaza Room, Radisson Wilshire Plaza Hotel

Friday, November 6, 1998

TENTH ANNUAL KARGER WORKSHOP
Steroid Action on Brain and Behavior
(Organized by Joseph G. Dulka)

7:00 COFFEE AND ROLLS

8:00 ***Joseph G. Dulka***
Opening Remarks: Explanation of Workshop Theme and Goals

S. Marc Breedlove *(Special Invited Guest)*
"The Purported Model of Sexual Differentiation in Mammals"

Gregory F. Ball and Jacques A. Balthazart
"Sex Steroid Hormone Action in the Avian Brain: Mechanisms Mediating Adult Plasticity and Sex Differences in Reproductive Behavior"

Julie S. Wade
"Sexual Dimorphism in Avian and Reptilian Courtship: Two Systems that Don't Play by Mammalian Rules"

12:00 LUNCH BREAK

1:30 ***Frank L. Moore***
"Novel and Classical Actions of Neuroactive Steroids on Brain and Behavior"

Harold H. Zakon
"Weakly Electric Fish: Steroid Hormones. Evolution, and Ion Channels"

Janis C. Weeks
"Steroid Hormone Regulation of Synapses, Neuronal Survival and Behavior During Insect Metamorphosis"

DISCUSSION

PRESENTATION to **DOCTOR KARGER** by ***Walt Wilczynski***

5:30 RECEPTION

The J.B. Johnston Club

Plaza Room, Radisson Wilshire Plaza Hotel

Saturday, November 7, 1998

EIGHTEENTH ANNUAL MEETING

7:00 COFFEE AND ROLLS

8:00 ***Werner Graf***
"What Determines Posture? Evolution and Sensory Input to the Head-Neck System"

8:30 ***Pokay M. Ma***
"The Neural Bases of Opercular Abduction in the Siamese Fighting Fish"

9:00 ***Curt Anderson***
"Distribution of Hypoglossal Motor Neurons Innervating the Prehensile Tongue of the Frog, *Hemisus Marmoratum*: Evidence for Neuronal Evolution Underlying a Novel Morphology"

9:30 COFFEE

10:00 ***Eduardo Rosa-Molinar***
"Transposition: Insight into the Development of a Sexually Dimorphic Nerve Plexus in a Teleost, the Western Mosquito Fish, *Gambusia affinis affinis*"

10:30 ***GianCarlo Panzica and Jacques Balthazart***
"Sexual Dimorphism, Steroid-induced Plasticity, and Behavioral Significance of the Vasotocinergic Innervation of the Avian Brain"

11:00 *Special Guest Lecture*
S. Marc Breedlove (Special Participant – Tenth Annual Karger Workshop)
"The Interaction of Steroids and Experience"

11:45 LUNCH BREAK

1999 – PROGRAM – 1999

J.B. JOHNSTON CLUB

Friday and Saturday, October 22-23, 1999

Grand Ballroom, Ritz Plaza Hotel

1701 Collins Avenue

Miami Beach, Florida 33139

The J.B. Johnston Club

Grand Ballroom, Ritz Plaza Hotel, Miami Beach, FL

Friday, October 22, 1999

ELEVENTH ANNUAL KARGER WORKSHOP

Diversity of Cerebral Cortex

(Organized by Todd Preuss)

7:00 COFFEE AND ROLLS

8:00 ***Todd Preuss***
Welcome and Introduction

Todd Preuss
"On the Non-uniformity of Cerebral Cortex and the Politics of Neuroscience"

Leah Krubitzer
"Cortical Maps: Genetic and Epigenetic Contributions to the Phenotype"

Ken Catania
"Cortical Organization in Insectivores - The Parallel Evolution of Sensory Systems and Cortex"

11:30 LUNCH BREAK

1:00 ***Patrick Hof***
"Neurochemical and Cellular Specializations in the Mammalian Neocortex Define Phylogenetic Relationships: Evidence from Cetaceans, Artiodactyls, and Primates"

David Kornack
"Neurogenesis and the Evolution of Cortical Diversity: Mode, Tempo, and Persistence in Adulthood"

Pat Levitt (Special Invited Guest)
"Developmental Strategies for Cortical Regionalization"

DISCUSSION

5:30 RECEPTION – Ocean Terrace

The J.B. Johnston Club

Grand Ballroom, Ritz Plaza Hotel, Miami Beach, FL

Saturday, October 23, 1999

NINETEENTH ANNUAL MEETING

7:00 COFFEE AND ROLLS

8:30 ***Werner Graf***
"How to Become a Flatfish?"

9:00 ***John B. Phillips***
"Magnetic Navigation by a Migratory Salamander"

9:30 ***Alice S. Powers***
"Do Reptiles have Cognitive Capacities? The Implications of Findings on the Similarities in the Neural Mediation of Learning and Memory in Reptiles and Mammals"

10:00 COFFEE

10:30 ***Mary Ann Ottinger and GianCarlo Panzica***
"The GnRH-I System in Japanese Quail: Sex Differences, Regulation, and Circuitry"

11:00 Invited Guest Lecture
Pat Levitt
(Special Participant - Eleventh Karger Workshop)
"Functional and Molecular Diversity of Gene Families Involved in Axon Guidance"

11:45 LUNCH BREAK

1:30 ***Earl Larson***
"Something Fishy about NPY Receptors: Origin of Multiple Subtypes in Teleosts"

The J.B. Johnston Club

Grand Ballroom, Ritz Plaza Hotel, Miami Beach, FL

Saturday, October 23, 1999

2:00 ***Hans Hofmann, and Russell D. Fernald***
"Social Control of Life-History Strategies Results in Differential Growth and Changes of Somatostatin-Neuron Size in an African Cichlid Fish"

2:30 ***Michael Fine***
"The Toadfish Swimbladder as a Sound-Producing Organ: A Plea for a New Paradigm?"

3:00 COFFEE

3:30 ***Daphne Soares and Catherine Carr***
"The Evolution of Nucleus Angularis"

4:00 ***Michael A. Barry***
"The Gustatory Lobes in Goatfish, Organization, Development, and Comparative Considerations"

4:30 ***Takatoshi Nagai***
"The Spinal Nerves Mediate Chemosensory Function of the Ventral Skin in Desert Toads"

5:00 BUSINESS MEETING

6:00 JBJC RECEPTION – Ocean Terrace

Dietrich L. Meyer, 1947-1999

He will be remembered as a creative and dedicated contributor to the spirit of comparative neurobiology.

TWELFTH ANNUAL KARGER WORKSHOP
Bourbon Orleans Hotel, New Orleans, LA
Friday, November 3, 2000

WORKSHOP TITLE: Social modulation of brain and behavior (Organized by Matthew Grober)

8:00: Welcome and Introduction

8:10: J. Wingfield (invited speaker)
The challenge hypothesis: Ecological bases of hormone-behavior interactions.

9:10: J. Balthazart and G.F. Ball
Ethological concepts revisited: Immediate early gene induction in response to sexual stimuli in birds.

10:10: COFFEE BREAK

10:30: R. Huber
Dynamic interactions of behavior and amine neurochemistry during acquisition and maintenance of social rank in crayfish.

LUNCH

1:00: J. Pfaus
Social interactions change brain function and behavior in rodents.

2:00: C. Summers
Mechanisms for quick and variable responses.

3:00: COFFEE BREAK

3:30: M. Grober and A. Bass
Social regulation of individual behavior and brain chemistry in fish.

4:30: Summary of presentations and general discussion.

5:30: RECEPTION

JBJC 2000 SCHEDULE (Regular meeting)
Bourbon Orleans Hotel, New Orleans, LA
Saturday, November 4, 2000

7-8: COFFEE AND ROLLS

8-8.25: Brian K. Shaw
To Crow Like a Chicken or a Quail: Exploring the Neural Underpinnings of Species Differences in Behavior.

8.25-8.50: Harold Zakon
E Unum Pluribus: the evolution of Na+ channel genes in vertebrates.

8.50-9.15: Dorothy H. Paul
Muscular and neural consequences of an ancient morphological-behavioral divergence in eumalacostracan Crustacea.

9.15-9.40 Peter Narins
Determinants of acoustic flow in the frog inner ear: New Insounds.

9.40-10: COFFEE BREAK

10-10.25: Sarah K. Woodley, Kathleen S. Matt, and Michael C. Moore
Estradiol modulation of central monoamine activity in female mountain spiny lizards.

10.25-10.50: Deborah L. Duffy and Gregory F. Ball
Mate Choice and Song in European Starlings: Linking Behavior, Brain, and Immune Function.

10.50-11.15: Luís A. Carneiro and Rui F. Oliveira
Social Modulation of Androgen Levels in Male Mozambique Tilapia, Orechromis mossambicus.

11.15-12: SPECIAL GUEST LECTURE: John Wingfield
Spring and Autumn Territoriality, Same Behavior Different Mechanisms?

12-1.35: LUNCH BREAK

1.35-2: Paul R. Manger and John D. Pettigrew
Multiple Maps, Activity-Dependent Representational Plasticity, and a Lack of "Association" Areas in the Anterior Wulst of the Barn Owl.

2-2.25: Robert R. Hampton
Competition between memory systems and evolution of the hippocampus in food storing birds.

2.25-2.50: Joseph A. Marcus and Douglas L. Rosene
Radial Neuron Number and the Non-Uniformity of Mammalian Neocortex.

2.50-3.15: Lori Marino
Cetacean Brain Evolution.

3.15-3.40: COFFEE BREAK

3.40-4.05: Ann B. Butler
Simple Eversion of Teleost Telencephalon: Holmgren Was Right.

4.05-4.30: Georg F. Striedter and R. Glenn Northcutt
How has comparative embryology changed the way we think about brain evolution?

4.30-4.55: Timothy J. Neary
Sense, Perception, and Nonsense: Is This a Dagger I See Before Me? Or Part of the Amygdala?

RECEPTION IMMEDIATELY FOLLOWING

The J.B. Johnston Club

Grand Ballroom, Clarion Bay View Hotel, San Diego, CA

Friday, November 9, 2001

THIRTEENTH ANNUAL KARGER WORKSHOP

Evolutionary Convergence as a Tool in Neuroscience

(Organized by Heather Eisthen and Kiisa Nishikawa)

7:30 COFFEE AND ROLLS

8:30 ***Kiisa Nishikawa***
Evolutionary convergence in nervous systems: Insights from comparative phylogenetic studies

9:20 ***Heather Elsthen***
Functional implications of evolutionary convergence in olfactory systems

10:10 COFFEE BREAK

10:40 ***Harold Zakon***
Convergent evolution at the molecular level

11:30 LUNCH

1:00 ***Greg Wray,*** **INVITED SPEAKER**
Do convergent developmental mechanisms underlie convergent phenotypes?

1:50 ***Jon Kaas***
Convergences in the modular and areal organization of sensory neocortex

2:40 COFFEE BREAK

3:10 ***Curtis Bell***
Electrosensory convergences

4:00 ***Catherine Carr and Daphne Soares***
Evolutionary convergence reveals shared computational principles: Examples from the auditory system

4:50 GENERAL DISCUSSION

5:30 RECEPTION - Bay View Room

The J.B. Johnston Club

Grand Ballroom, Clarion Bay View Hotel, San Diego, CA

Saturday, November 10, 2001

TWENTY-FIRST ANNUAL MEETING

7:30 COFFEE AND ROLLS

8:30 ***Peter M. Narins***
Sensory basis for aggression in a poison-dart frog

8:50 ***Kristopher Lappin and Kiisa C. Nishikawa***
Hypoglossal afferents trigger recovery of elastic strain energy during ballistic tongue projection in toads

9:10 **THE J. B. JOHNSTON CENTENNIAL LECTURE**

Greg Wray, **INVITED SPEAKER**
The developmental basis for caste polymorphism in ants
Introduced by Alice S. Powers with special tribute to J.B. Johnston

10:10 COFFEE BREAK

10:40 ***R. Glenn Northcutt***
The telencephalon of ray-finned fishes revisited

11:00 ***Leo S. Demski***
In a fish's mind's eye: a review and synthesis of studies on the sensory biology of the teleost pallium

11:20 ***Daphne Soares and Catherine E. Carr***
Ancient facial receptors of crocodilians

11:40 ***Jason A. Neeser and Christopher S. von Bartheld***
Evidence for a paratympanic organ (presumed lateral line remnant) in the middle ear of juvenile alligators: implications for the phylogeny of hearing

12:00 LUNCH BREAK

The J.B. Johnston Club

Grand Ballroom, Clarion Bay View Hotel, San Diego, CA

Saturday, November 10, 2001

12:00 LUNCH BREAK

1:30 ***Sabrina S. Burmeister***
Interactions between the communication and endocrine systems of the green treefrog

1:50 ***Hans A. Hofmann***
Functional phenomics of social behavior

2:10 ***Steven M. Phelps***
Individual differences and the origins of behavioral diversity

2:30 ***L.R. Baxter and R.F. Ackermann***
Brain mediation of ritualistic social behaviors: Functional neuroanatomical homology?

2:50 COFFEE BREAK

3:20 ***Earl T. Larson, Svante Winberg, and Dan Larhammar***
Responsiveness of the neuropeptide Y system to food intake in fishes

3:40 ***Lori Marino***
Look Ma – no frontal lobes! The neurobiological implications of convergence in self-recognition ability in dolphins and hominoids

4:00 ***Michael A. Farries***
A nonvocal motor pathway found in nonoscines exhibits similar organization to the oscine and psittacine vocal systems and may constitute their evolutionary precursor

4:30 BUSINESS MEETING

5:30 RECEPTION - Bay View Room

FOURTEENTH ANNUAL KARGER WORKSHOP

Ramada Resort, Orlando FL
Friday, November 1, 2002

Evolutionary Perspectives in Cognition

(Organized by Alice Powers and Lainy Day)

7:30 COFFEE AND ROLLS

8:30 ***Alice Powers*** (St. Johns University)
Introduction

8:40 ***Cosme Salas*** (University of Seville)
Evolution of forebrain and cognition in vertebrates: conservation across diversity

9:30 ***Mauricio Papini*** (Texas Christian University)
Comparative psychology of surprising nonreward

10:20 COFFEE BREAK

10:50 ***Lainy Day*** (UC Santa Barbara)
Evolution of neural systems for spatial cognition: foraging ecology in lizards and bower complexity in bowerbirds

11:40 LUNCH

1:15 ***Sara Shettleworth*** (University of Toronto) – *invited speaker*
Memory and hippocampal specialization in food-storing birds: Lessons for comparative cognition

2:05 ***Vern Bingman*** (Bowling Green State University)
Neuroethology of spatial cognition: The avian hippocampus and the homing behavior of pigeons

2:55 COFFEE BREAK

3:15 ***Lucia Jacobs*** (UC Berkeley)
The evolution of the cognitive map

4:05 ***Todd Preuss*** and ***Danny Povinelli*** (University of Louisiana at Lafayette)
A guide for the comparatively perplexed: Reinventing the comparative psychology of cognition

4:55 GENERAL DISCUSSION

5:30 RECEPTION

JBJC PROGRAM
November 2, 2002

8:30
Robert R. Hampton
Are Humans Alone in Being Aware of Memory?

8:55
Durán E, Ocaña F, Gómez A, Álvarez E, Jiménez-Moya F, Broglio C, Rodríguez F, Salas C
Place learning and hippocampal pallium in teleost fish

9:20
Gómez A, Álvarez E, Durán E, Ocaña F, Jiménez-Moya F, Broglio C, Rodríguez F, Salas C
Goldfish of cerebellum and classical conditioning

9:45
Coffee break

10:10
Vladimir A. Bastakov and Sergei V. Ogurtsov
Early two-staged learning of native pond odor in anuran amphibians

10:35
Arla G. Hile
Effects of male vocal learning on female behavior in the budgerigar

11:00
Sara Shettleworth, Invited Speaker

12:00
Lunch

1:30
Shiva R. Sinha and Cynthia F. Moss
Neural mechanisms of audio-motor integration in the echolocating bat, Eptesicus fuscus.

1:55
Erich Jarvis
Results of NIH conference on Avian Nomenclature

2:20
Michael Farries
An Alternative Hypothesis on the Relationship Between Avian and Mammalian Basal Ganglia

2:45
Coffee break

3:15
Shaun P. Collin and Ann E.O. Trezise
The evolution of visual pigments and color vision in vertebrates

3:40
R.Glenn Northcutt and Georg F. Striedter
An Explanation for the Origin of Telencephalic Eversion in Ray-finned Fishes

4:05
C. Shumway and H. Hofmann
In Praise of Comparing Differences

4:30
William Saidel
Higglety Piggelty Pop: Filtered Properties and Behavior: Is that all Neuroethology is? (with apologies to Maurice Sendak)

The J.B. Johnston Club
Thursday, November 6, 2003

15th Annual Karger Workshop
The Development of Vertebrate Sensory Organs

Organized by R. Glenn Northcutt

7:00	COFFEE, JUICE AND ROLLS
8:15	**R. Glenn Northcutt** Welcome and Introductory Remarks
8:30	**Kathleen E. Whitlock** Making Scents: Development of the Olfactory System
9:30	BEVERAGES AND CINNAMON ROLLS
10:00	**Russell D. Fernald** Making an Eye: What Does it Take?
11:00	**Thurston C. Lacalli** **KARGER WORKSHOP INVITED GUEST** Sensory Systems in Amphioxus: The Developmental and Evolutionary Context
12:00-1:30	LUNCH BREAK
1:30	**Melissa A. Gibbs** Lateral Line Receptors: Where Do They Come from and Where is Our Research Going?
2:30	**Bernd Fritzsch and K. W. Beisel** Molecular Conservation and Novelties in Vertebrate Ear Development
3:30	BEVERAGES, PECAN TARTS AND PRALINES
4:00	**R. Glenn Northcutt** Taste Buds: Evolution and Development
5:00	RECEPTION

The J.B. Johnston Club, 2003
Bourbon Orleans Hotel
Friday Morning, November 7, 2003

7:30-8:30 Coffee, juice and rolls

8:30 Auditory responses in the isthmal region of the frog.
Nikolay G. Bibikov, N.N.Andreyev
Acoustics Institute, Moscow

8:55 Segment-specific fate of a larval neuromuscular system during metamorphosis differs in two families of Lepidoptera.
M.C. Zee and J.C. Weeks
University of Oregon

9:20 Proposed organization of the turtle amygdala.
Alice Powers[1], Ann Butler[2], Eliana Zampieri[1], and Anton Reiner[3]
[1]St.John's University, [2]George Mason University, [3]University of Tennessee at Memphis

9:45 Beverages and New Orleans King Cake

10:15 Interaction of two magnetoreception systems in the map-based homing of a salamander.
John B. Phillips
Virginia Tech

10:40 Foraging at the speed of touch – Rapid reaction times in the star-nosed mole.
Kenneth C. Catania and Fiona E. Remple
Vanderbilt University, Nashville, TN

11:05 * Karger Invited Speaker *

Nerve cord organization and locomotory control in amphioxus larvae: the morphological basis of "motivation" in a simple animal.
Thurston C. Lacalli
University of Victoria

12:00-1:30 Lunch

The J.B. Johnston Club, 2003
Bourbon Orleans Hotel
Friday Afternoon, November 7, 2003

1:30 The neuromuscular system controlling courtship behavior in *Anolis carolinensis*

E.L. O'Bryant
University of Texas at Austin

1:55 Insights into the functions of dopaminergic cell populations in whiptail lizards.

Sarah C. Woolley
University of California at San Francisco

2:20 Correlated changes in behavioral and neural phenotypes following social experience.

Jon Sakata
University of California at San Francisco

2:45 Some nuclei in chick dorsal telencephalon have the molecular signature of layer 4 of the mammalian cerebral cortex.

Jennifer Dugas-Ford and Clifton W. Ragsdale
University of Chicago

3:10 Beverages and Hot Jumbo Pretzels

3:45 Solitary chemoreceptors in the nasal cavity of rodents: Remnants of an ancestral vertebrate chemoreceptor system?

Thomas E. Finger, Anne Hansen, Karl T. Anderson, and Bärbel Böttger
University of Colorado, Denver

4:05 Encephalization trends in cetacean evolution: New data and new analyses.

Lori Marino
Emory University, Atlanta, GA

4:30 Open-ended song learning: Elusive analogies in the development of birdsong and speech

MarthaLeah Chaiken
Hofstra University

4:55 – Business meeting, book distribution

5:30-8:30 Reception

The J. B. Johnston Club
Radisson Hotel Harbor View
Thursday, October 21, 2004
16th Annual Karger Workshop

Hindbrain Evolution, Development, and Organization Revisited

Organized by E. Rosa-Molinar and M. D. Pritz

7:00	COFFEE, JUICE AND ROLLS
8:15	**E. Rosa-Molinar** Welcome and Introductory Remarks.
8:30	**M. B. Pritz** Comparisons and Homology in Developing Embryos.
9:30	BEVERAGES AND ROLLS
10:00	**E. Gilland and R. G. Baker** Adaptive Evolution of Rhombomeric Neuronal Systems.
11:00	**Robb Krumlauf** **KARGER WORKSHOP INVITED GUEST** Regulating Hindbrain Patterning: A Story in Segments.
12:00-1:30	LUNCH BREAK
1:30	**Scott E. Fraser** High Resolution Imaging the Cell Lineages and Cell Motions that Build the Vertebrate Hindbrain.
2:30	**Paul Trainor** Hox Genes and Neural Crest Cell Plasticity: Their Roles in Craniofacial Development and Evolution.
3:30	BEVERAGES AND SNACKS
4:00	**Organizers and Presenters** Discussion: Where Do We Go From Here?
5:00	RECEPTION

The J.B. Johnston Club, 2004
Radisson Hotel Harbor View
23rd ANNUAL MEETING
Friday Morning Session, October 22, 2004

7:00 COFFEE AND ROLLS

8:00 Molecular Evolution of an Animal Communication Signal: Na^+ Channel Genes and Electric Fish.
Harold H. Zakon, Ying Lu, Derrick Zwickl, David Hillis
University of Texas at Austin

8:30 Toral Recipient Parts of Preglomerular Nucleus in Cyprinid Teleosts.
Naoyuki Yamamoto and Hironobu Ito
Nippon Medical School

9:00 Fish & Chips: Functional Genomics of Social Plasticity in African Cichlid Fishes.
Susan C. P. Renn, Eleanor Fraser, and Hans A. Hofmann
Harvard University

9:30 Organizing the Zebrafish Hindbrain: Interactions Between FGF and Retinoic Acid Signals.
Lisa Maves and Charles B. Kimmel
University of Oregon

10:00 MORNING BREAK

10:30 Amphibian and Teleost Dorsal Thalamic Projections Differ.
R. Glenn Northcutt
University of California, San Diego

11:00 *Karger Invited Speaker*
Regulation of Vertebrate Hindbrain Development.

Robb Krumlauf; Stowers Institute, 1000 E. 50th Street, Kansas City, MO. 64110

12:00-1:00 LUNCH

Friday Afternoon Session, October 22, 2004

1:00 Color Signal Design in a Stomatopod Crustacean (*Gonodactylus smithii)* under Varying Light Conditions.
Alexander G. Cheroske and Thomas W. Cronin
University of Maryland

1:30 Neural Adaptation and Reorganization in the Blind Cavefish, *Astyanax mexicanus* .
Daphne Soares
University of Maryland

2:00 Cross-modal Binding in a Tropical Dart-poison Frog.
Peter M. Narins[1], Daniela S. Grabul[2], Kiran K. Soma[1], Walter Hoedl[2]
[1]UCLA, [2]University of Vienna

2:30 Mapping Sex Differences in the Neural Responses to Acoustic Social Cues.
Kim L. Hoke
University of Texas at Austin

3:00-3:30 AFTERNOON BREAK

3:30 A Case For Clipping the Caprimulgiformes: The Taxonomic Implications of Cerebellar Morphology.
Andrew N. Iwaniuk and Douglas R.W. Wylie
University of Alberta, Canada

4:00 The Role of Variation in Singing Behavior in the Regulation of Seasonal Neuroplasticity in European Starlings.
Jennifer J. Sartor and Gregory F. Ball

Johns Hopkins University

4:30 Neuro-Evolutionary Patterning of Sociality.
James L. Goodson and Andrew K. Evans
University of California at San Diego

5:00 Business Meeting, book distribution

6:00 RECEPTION

2005 Karger Workshop: Evolution of Neurotrophic Factors
November 10, 2005
Hotel Washington, Washington, D.C.

Organized by: Christopher S. von Bartheld (University of Nevada, USA)

7:00 Continental Breakfast.

8:00 Welcome and introductory remarks.
Christopher S. von Bartheld, University of Nevada (USA)

8:10 Prechordate evolution of the neurotrophin and tumor necrosis factor signaling systems.
Mark Bothwell, University of Washington (USA)

9:10 Evolution of the neurotrophin and Trk receptor gene families in chordates.
Finn Hallböök, Uppsala University (Sweden)

10:10 AM Break (20 minutes)

10:30 Evolution of Trks and related receptors in invertebrates: The search for conserved receptors and their functions.
Wayne Sossin, McGill University (Canada)

11:30 Neurotrophin receptors in neuronal populations among vertebrates: tools for evolutionary changes or stability in neural circuits?
Bernd Fritzsch and Christopher S. von Bartheld, Creighton University and University of Nevada (USA)

12:30-2:00 Lunch Break

2:00 Evolution of the GDNF family ligands and receptors - new masters for the old servant?
Matti S. Airaksinen, Tuomas Hätinen, and Liisa Holm, University of Helsinki (Finland)

3:00 Gliatrophic and neurotrophic factors in the Drosophila central nervous system.
Alicia Hidalgo, University of Birmingham (UK)

4:00-4:15 PM Break (15 minutes)

4:15 Building complex brains- a need for neurotrophic factors?
Mike Fainzilber, Weizmann Institute of Science (Israel)

5:15-6:00 General Discussion

6:00 Reception

The J.B. Johnston Club, 2005
25th ANNUAL MEETING
Friday Morning Session, November 11, 2004

7:00 Continental Breakfast.

Note: The year on this program is incorrect, this is the 2005 program. The date was mistakenly not changed from the previous year. -Daniel Hoops, 2021

8:00 Evolution of tetrapod directional hearing
Jakob Christensen-Dalsgaard
Institute of Biology, University of Southern Denmark, Campusvej 55, DK-5230 Odense M (Denmark) (jcd@biology.sdu.dk)

8:25 The teleost swimbladder as a sound-producing and auditory organ: a reassessment
Michael L. Fine[a], Timothy M. Cameron[b], Mohammed Ali[a], Terrence King[a], Brian B. Nguyen[a] and Kim Nguyen[a]
[a]Department of Biology, Virginia Commonwealth University, Richmond, VA 23284-2012 (USA), [b]Department of Mechanical Engineering, Kettering University, Flint, Michigan (USA) (mlfine@vcu.edu)

8:50 The laterophysic connection: Peripheral specialization for reception of acoustic stimuli in Chaetodontid butterflyfishes?
Jacqueline F. Webb[a, b], W. Leo Smith[a, b], J. Lucas Herman[a], Christopher F. Woods[a], Darlene F. Ketten[c]
[a]Department of Biology, Villanova University, Villanova, PA 19085 (USA), [b]Department of Ichthyology, American Museum of Natural History, New York, NY 10024 (USA), Center for Environmental Research and Conservation, Columbia University, New York, NY 10027 (USA), [c]Biology Department, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 (USA) (Jacqueline.webb@villanova.edu)

9:15 The evolution of pairing behavior, sound production and hearing in Chaetodontid butterflyfishes: Evidence from behavior and physiology
Timothy C. Tricas and Kelly S. Boyle
Department of Zoology and Hawaii Institute of Marine Biology, University of Hawaii at Manoa, Honolulu, HI 96822 (USA) (tricas@hawaii.edu)

9:40 AM Break (15 minutes)

9:55 Mostly malleus: Ground sound detection by the extraordinary ear of the golden mole
Peter M. Narins
Departments of Physiological Science and Ecology & Evolutionary Biology, University of California Los Angeles, Los Angeles, CA 90095-1606 (USA) (pnarins@ucla.edu)

10:20 Delineation of cortical primary sensory areas of the Florida manatee
D.K. Sarko[a]; R.L. Reep[a,b]
[a]Departments of Neuroscience and [b]Physiological Sciences, University of Florida, PO Box 100144, Gainesville, FL 32610 (USA) (dsarko@ufl.edu)

10:45 Towards a cellular understanding of adult neurogenesis and neuronal regeneration in teleost fish
Günther K.H. Zupanc
School of Engineering and Science, International University Bremen, P.O. Box 750 561, D-28725 Bremen (Germany) (g.zupanc@iu-bremen.de)

11:10 Evolution of the neurotrophins and Trk receptor gene families in chordates
Finn Hallböök[a], Robert P. Olinski[a] and Lars-Gustav Lundin[b]
Department of Neuroscience, Units for [a]Developmental Neuroscience and [b]Pharmacology, Uppsala University, S-75123, Uppsala (Sweden) (Finn.Hallbook@neuro.uu.se)

12:00-1:45 Lunch

Note: The year on this program is incorrect, this is the 2005 program.
The date was mistakenly not changed from the previous year.
Daniel Hoops, 2021

Friday Afternoon Session, November 11, 2004

1:45 Sound localization circuits in the auditory brainstem of the emu, *Dromaius novaehollandiae*

Katrina M. MacLeod[a], Catherine E. Carr[a], Daphne Soares[a] and Jonathan Z. Simon[a,b]
[a]Department of Biology and [b]Department of Electrical and Computer Engineering, University of Maryland, College Park, MD 20742 (USA) (macleod@umd.edu)

2:10 Evidence for polysensory processing in sensory areas afferent to vocal control nuclei in the budgerigar

Steven E. Brauth[a], Wenru Liang[a], Yodit Beru[b], Ye-zhong Tang[b], Todd F. Roberts[c] and William S. Hall[a]
[a]Departments of Psychology and [b]Biology, University of Maryland, College Park MD 20742 (USA), [c]Department of Neurobiology, Duke University, Durham NC (USA) (brauth@psyc.umd.edu)

2:35 Behavioral and neural evidence for on-line processing of song

Jon T. Sakata and Michael S. Brainard
Keck Center for Integrative Neuroscience, Department of Physiology, Box 0444
University of California San Francisco, San Francisco, CA 94143-0444 (USA)
(jsakata@phy.ucsf.edu)

3:00 PM Break (10 minutes)

3:10 How does dopamine regulate male sexual behavior: Lessons from the birds

C.A. Cornil[a,b], J. Balthazart[b], G.F. Ball[a]
[a]Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore MD21218 (USA), [b]Center for Cellular and Molecular Neurobiology, University of Liège, Liège B-4020 (Belgium) (ccornil@jhu.edu)

3:35 Steroid hormone mediation of brain plasticity and aggression in free-living tree lizards, *Urosaurus ornatus*

David Kabelik[a], Stacey L. Weissa[a,b], Michael C. Moore[a]
[a]School of Life Sciences, Arizona State University, Tempe, AZ 85287 (USA), [b]Biology Department, University of Puget Sound, Tacoma, WA 98416 (USA) (david.kabelik@asu.edu)

4:00 Intrinsic basis for flexible female mate choice

Kathleen S. Lynch
Institute for Neuroscience, University of Texas, Austin, TX 78712 (USA)
(lynchks@mail.utexas.edu)

4:25 The evolution of complexity in African cichlid fishes

Caroly A. Shumway[a] and Hans A. Hofmann[b]
[a]Dept. of Research, New England Aquarium, Boston, MA 02110 (USA), [b]Bauer Center for Genomics Research, Harvard University, Cambridge, MA 02138 (USA). (cshumway@neaq.org, hans@cgr.harvard.edu)

4:50 PPM Break (10 minutes)
5:00 Business Meeting
6:00 Socializer

2006 KARGER WORKSHOP

Thursday October 12, 2006; 8:00am-6:00pm
Westin Peachtree Hotel
210 Peachtree St. NW
Atlanta, Georgia USA 30303

Plasticity and Diversity in Behavior and Brain Function: Important Raw Material for Natural Selection?

Organized by: Øyvind Øverli

(Norwegian University of Life Science)

7:00 Coffee and sweet rolls

8:00-8:15 Welcome and introductory remarks
Øyvind Øverli, **Norwegian University of Life Science**

8:15-9:30 Individual variation in coping with stress: Ultimate and proximate mechanisms
Jaap M. Koolhaas, University of Groningen (Special Invited speaker)

9:30-10:00 AM Break

10:00-11:00 Genetically determined variation in stress responsiveness in rainbow trout: behavior and neurobiology
Svante Winberg, Norwegian School of Veterinary Science

11:00-12:00 Social regulation of neurogenesis in teleosts
Christina Sørensen, University of Oslo

12:00-1:00 Lunch

1:00-2:00 Genomic responses to behavioral interactions
Sabrina S. Burmeister, University of North Carolina

2:00-3:00 Predicting social dominance in *Anolis* lizards
Wayne Korzan, Stanford University

3:00-3:30 PM Break

3:30-4:30 Glucocorticoids and the pubertal development of agonistic behavior
Joel Wommack, Florida State University

4:30-5:30 Stress, aggression and coping strategies in different rodent models
Alexa H. Veenema, University of Regensburg

5:30-6:00 Group discussion

6:00-7:00 Reception

The J.B. Johnston Club

Friday, October 13, 2006

7:00-8:00 Coffee and sweet rolls

8:00-8:25 Species Differences in Sensorimotor Adaptation in Shoaling and Solitary Weakly Electric Fish: Possible Role of Phosphorylation/dephosphorylation? *Andrew A. George, Nikolai C. Dembrow, and Harold H. Zakon*.* The University of Texas at Austin, Section of Neurobiology, College of Natural Sciences. 1 University Station C0920, Austin, TX 78712 USA. email: andrewgeorge@mail.utexas.edu

8:25-8:50 Underwater Sniffing in Semiaquatic Mammals *Kenneth C. Catania.* Vanderbilt University, Department of Biological Sciences, Nashville, TN USA. email: ken.Catania@Vanderbilt.edu

8:50-9:15 Context-dependent Modulation of Activity in the Olfactory Epithelium *Heather L. Eisthen.* Department of Zoology, Michigan State University, East Lansing, MI USA. email: eisthen@msu.edu

9:15-9:40 The Central Action of Gonadotropin on Calling Behavior in the South African Clawed Frog *Eun-Jin Yang[1,2] and Darcy B. Kelley[1,2].* [1]Biological Sciences, [2]Program in Neurobiology and Behavior, Columbia University, New York, NY 10027, USA. email: ey2106@columbia.edu

9:40-10:00 Coffee Break

10:00-10:25 Developmental and Lesion-induced Cell Proliferation in Anuran Central Auditory Nuclei *Andrea M. Simmons and Judith A. Chapman.* Department of Psychology, Brown University, Providence, RI 02912 USA. email: Andrea_Simmons@brown.edu

10:25-10:50 Behavioral and Noradrenergic Regulation of Context-dependent Immediate-early Gene Expression in Male Zebra Finches (*Taeniopygia guttata*) *Christina B Castelino[1,2] and Gregory F Ball[1].* [1]Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore, MD 21218 USA. [2]Current address: Department of Biology, University of Pennsylvania, Philadelphia, PA 19104 USA. email: castelin@sas.upenn.edu

10:50-11:15 Escapé! Socially Mediated Fear Learning in Rainbow Trout *Russ E. Carpenter[1] and Cliff H. Summers[1,2].* [1]Department of Biology, [2]Neuroscience Group, Basic Biomedical Sciences, University of South Dakota, Vermillion, SD 57069 USA. email: recarpen@usd.edu

11:15-12:05 Individual Variation in Coping with Stress: Ultimate and Proximate Mechanisms *J. M. Koolhaas, Special Invited Guest Speaker.* Department of Behavioral Physiology. University Groningen, Haren, The Netherlands. email: j.m.koolhaas@rug.nl

12:05-1:50 Lunch ("Brain, Behavior and Evolution" editorial board meeting)

1:50-2:15 Gene-architectonics of the Avian Pretectum Clarifies its Nuclear Subdivisions *L. Puelles, J.L. Ferrán, L. Sánchez-Arrones, J. Sandoval and M. Martínez-de-la-Torre.* Department of Human Anatomy, Medicine, University of Murcia, Spain. email: puelles@um.es

2:15-2:40 The Role of the Cerebellum in the Evolution of Tool Using Behavior in Birds *Andrew N. Iwaniuk[1], Louis Lefebvre[2] and Doug R. Wong-Wylie[1,3]*. [1]Department of Psychology, University of Alberta, Edmonton, Alberta, Canada. [2]Department of Biology, McGill University, Montreal, Quebec, Canada. [3]Centre for Neuroscience, University of Alberta, Edmonton, Alberta, Canada. email: brainsize@yahoo.ca

2:40-3:05 The Avian Cerebellum: Neuroanatomical and Hormonal Adaptations for Complex Mating Displays. *Lainy B. Day[1], Rory Spence[2] and Barney A. Schlinger[2]*. [1]Department of Biology, University of Mississippi, Oxford, MS 38677 USA. [2]Department of Physiological Science, University of California, Los Angeles, CA 90049 USA. email: lainday@olemiss.edu

3:05-3:30 Hippocampal Adaptations in Food-hoarding Birds: The Importance of Understanding the Behavior *Tom V. Smulders and Lucinda H. Male.* School of Biology and Psychology and Institute of Neuroscience, Henry Wellcome Building for Neuroecology, Newcastle University, Newcastle upon Tyne, NE2 4HH, United Kingdom. email: tom.smulders@ncl.ac.uk

3:30-3:45 PM Break

3:45-4:10 The Relationship of Individual Variability to Phylogenetic Variability in the Evolution of Brain Component Structure. *Barbara L. Finlay, Flora Hinz and Richard B. Darlington.* Cornell University, Ithaca, NY USA. email: blf2@cornell.edu

4:10-4:35 Studying the Dolphin Brain with PET, SPECT, CT, and MRI *Sam Ridgway[1], Dorian Houser[1], Don Carder[1], Mandy Keogh[1], Cynthia Smith[1], Carl Hoh[2]*. [1] SPAWAR Systems Center SAN DIEGO, Division D235, 53560 Hull St., San Diego, CA 92152-5001. [2] School of Medicine, University of California, San Diego, CA 92093. email: sridgway@ucsd.edu

4:35-5:00 Digit Ratio and CNS Masculinization in Mice *Peter L. Hurd[1] and Douglas Wahlsten[2]*. [1] Department of Psychology, University of Alberta, Edmonton, Alberta, Canada T6G 2E9. [2] Great Lakes Institute for Environmental Research, Department of Biological Sciences, University of Windsor, Windsor, Ontario Canada N9B 3P4. email: phurd@ualberta.ca

5:00-6:00 Business Meeting

6:00-8:00 Reception

2007 Karger Workshop and J.B. Johnston Club Meeting
November 1 – 2, 2007
San Diego Marriott Gaslamp Quarter Hotel
San Diego, California

Welcome to the 2007 Karger Workshop and annual meeting of the J.B. Johnston Club. This year's Karger Workshop was organized by Hans Hofmann and Caroly Shumway and is entitled **"Neurobiological Lessons Learned from Comparative Studies: Evolutionary Forces Shaping Brain and Behavior."**

The 27th regular meeting of the J.B. Johnston Club is on Friday, November 2nd and consists of short talks from the members selected by the JBJC Program Committee, Catherine McCormick, Cliff Summers and Andrew Iwaniuk, as well as a presentation from this year's special invited guest, Dr. Louis Lefebvre from McGill University.

Please note in the 2007 program the addition of information regarding the Luis Carneiro Memorial Student Travel Fund and how to propose a Karger Workshop for 2008 or any subsequent year.

We hope you enjoy this year's meeting and thank you for your continuing support of the J.B. Johnston Club and Karger Publishers, the publishers of "Brain, Behavior and Evolution."

Catherine McCormick, Program Committee Chairman
Cliff Summers, Member
Andrew Iwaniuk, Member
Blinda McClelland, JBJC Meeting Coordinator

Note from Blinda: I have a busy and complex life and really need some help to keep planning these meetings. I'll be asking for volunteers to assist me for next year's meeting. Please start thinking about what you can do to help. Volunteer positions include, but are not limited to: Publicity, Webmaster, Promotional Materials, Book Collection (this should be a student), Registration Desk, Local Host (someone from Washington DC and Chicago), Funding Source Research, AV Coordinator.

See me to sign up for something.....Thanks!

2007 KARGER WORKSHOP

Thursday November 1, 2007; 8:30am-6:00pm
San Diego Marriott Gaslamp Quarter
San Diego, CA

Neurobiological Lessons Learned from Comparative Studies: Evolutionary Forces Shaping Brain and Behavior

Organized by:

Hans A. Hofmann (The University of Texas at Austin) &

Caroly Shumway (The Nature Conservancy & Boston University)

7:30 Coffee and sweet rolls

8:30-8:40 Welcome and introductory remarks
Hans Hofmann/Caroly Shumway, The Nature Conservancy & Boston University

8:40-9:40 Evolutionary neural links between invertebrates and vertebrates
Linda Holland, Scripps-UCSD

9:40-10:45 Behavioral flexibility and brain evolution in birds
Louis Lefebvre, McGill University (Special Invited Speaker)

10:45-11:15 Coffee break

11:15-12:15 How social and ecological forces affect insect mushroom bodies
Sarah Farris, West Virginia University

12:15-1:30 Lunch

1:30-2:15 How ecological forces affect cichlid fish brains
Caroly Shumway, The Nature Conservancy & Boston University

2:15-3:00 Social organization shapes brain and genome in African cichlid fishes
Hans Hofmann, The University of Texas at Austin

3:00-4:00 Design principles in neural circuits: lessons from birds and mammals
Sam Wang, Princeton University

4:00-4:30 Coffee break

4:30-5:30 Exploring the Origins of the Human Brain through Molecular Evolution
Eric Vallender, Harvard Medical School

5:30-6:00 General discussion

6:00-7:00 Reception

2007 J.B. Johnston Club Annual Meeting
November 2, 2007
San Diego Marriott Gas Lamp Quarter, San Diego, CA

7:00 – 8:20 Breakfast

8:20-8:30 Introduction, Program Committee

8:30 – 8:55 The key deletion of an adaptive neural circuit in decapod crustaceans, Zen Faulkes

8:55 – 9:20 Mapping of neuronal subpopulations in the appendicularian *Oikopleura dioica*, with some comparative considerations, Joel C. Glover, Anne Mette Søviknes

9:20 – 9:45 Telencephalic organization in lungfishes: a new histochemical model, R. Glenn Northcutt

9:45 AM Break (20 minutes)

10:05 – 10:30 Morphogenesis of the cerebellum in teleost fish, Yuji Ishikawa, Takako Yasuda, Takahiro Kage, Naoyuki Yamamoto, Masami Yoshimoto, Hiroyuki Takeda and Hironobu Ito

10:30 – 10:55 Variation in cerebellar foliation in cartilaginous fishes: Ecological and behavioral considerations, K.E. Yopak, L. Frank

10:55 – 11:20 Socially-relevant stimuli modulate cell proliferation in the adult green treefrog brain (*Hyla cinerea*), L.M. Almli

11:20 – 12:20 Behavioral drive and the evolution of enlarged brains, Louis Lefebvre, Zoltan Barta, Daniel Sol

12:20 – 2:10 Lunch

Afternoon Session

2:10 – 2:35 Exploring the origin of vertebrate hearing: neural mechanisms of directional sensitivity and frequency selectivity in an ancient fish, Michaela Meyer, Arthur N. Popper, Richard R. Fay

2:35 – 3:00 Singing fish in vitro: Electrophysiological and neuroanatomical correlates of sonic neuron rhythmic activity, M.C. Zee, A.H. Bass

3:00 – 3:25 Visual communication changes behavior performances, but not reproductive or stress-relevant gene expression in a teleost, Chun-Chun Chen, Russell D. Fernald

3:25 – 3:45 PM Break (20 minutes)

3:45 – 4:10 Orbit orientation, binocularity and eye size in relation to visual regions of the avian brain, Douglas R. W. Wylie, Christopher P. Heesy, Margaret I. Hall, Andrew N. Iwaniuk

4:10 – 4:35 Dopamine binds to alpha2-adrenergic receptors: Evidence from binding, electrophysiological and behavioral studies, C.A. Cornil, G.F. Ball

4:35 – 5:00 Attention and the cholinergic system in turtles, Alice S. Powers

5:00 Business Meeting and Book Give-away to Graduate Students

6:00 Reception, Silent Auction

NOTE: Graduate Students, avoid disappointment!! Be sure to enter your name in the Book Give-away. Forms will be available at the reception desk, and you must be at the Business Meeting to win!

2008 KARGER WORKSHOP
November 13, 2008
The Courtyard by Marriott Capitol Hill/Navy Yard
Washington DC

Forebrain Evolution in Fishes

Organized by R. Glenn Northcutt (University of California San Diego, La Jolla, CA USA) and Mario F. Wullimann (Ludwig-Maximilians-University, Munich, Germany)

In belated honor of Rudolf Nieuwenhuys' 80th birthday, and in recognition of his tremendous contributions to the field of comparative neurobiology

Morning

7:00 – 8:00	**Coffee and Pastries**
8:00 – 8:20	**Introductory Remarks**
8:20 – 9:00	**Segmental Organization of the Forebrain in Lampreys** *Manuel Pombal, University of Vigo (Spain)*
9:00 – 9:40	**New Perspectives on the Organization of the Telencephalon in Elasmobranchs: A Developmental Approach** *Isabel Rodríguez-Moldes, University of Santiago de Compostela (Spain)*
9:40 – 10:20	Coffee
11:00 – 11:40	**An Immunohistochemical Approach to Lungfish Forebrain Organization** *Agustín González, University of Madrid (Spain) and R. Glenn Northcutt, University of California San Diego (USA)*
11:40 – 1:30	Lunch Break

Afternoon

1:30 – 2:20	**The Actinopterygian Forebrain Revisited** ***2008 Karger Workshop Special Invited Guest*** *Rudolf Nieuwenhuys, Netherlands Institute for Neuroscience (The Netherlands)*
2:20 – 3:00	**Stalking the Everted Telencephalon: Comparisons of Forebrain Organization in the Basal Ray-Finned Fishes and the Teleosts** *Mark Braford, Oberlin College (USA)*
3:00 – 3:30	Coffee
3:30 – 4:20	**Evolutionary Interpretation of Teleostean Forebrain Molecular Anatomy** *Thomas Mueller, University of California San Francisco (USA) and Mario F. Wullimann, Ludwig-Maximilians-University (Germany)*
4:20 – 5:30	Discussion and Closing Remarks
5:30	Reception

2008 J.B. Johnston Club Annual Meeting
November 14, 2008
Courtyard by Marriott Capitol Hill/Navy Yard
Washington DC

7:00 – 8:20 **Break for Breakfast**

8:20-8:30 **Introduction,** Program Committee

8:30 – 8:55 **Evolution of sound localization in land vertebrates,** Ye-zhong Tang, Catherine E. Carr, Kai Yan and Jakob Christensen-Dalsgaard

8:55 – 9:20 **Hormone influences on auditory processing in the green treefrog** Jason A. Miranda

9:20 – 9:45 **Vocal initiation in Xenopus laevis (The African Clawed Frog); a role for serotonin,** Heather J. Yu and Ayako Yamaguchi

9:45 **AM Break (20 minutes)**

10:05 – 10:30 **Trophic Role of Tanycytes at the Interface between Locus Coeruleus and the Cerebrospinal Fluid: Phylogenetic Implications,** Christopher S. von Bartheld, Larisa M. Baryshnikova, Chengyuan Feng

10:30 – 10:55 **Social investigation in a memory task relates to natural variation in septal expression of oxytocin receptor and vasopressin receptor 1a,** Alexander G. Ophir, Da-Jiang Zheng, Shainnel Eans, and Steven M. Phelps

10:55 – 11:20 **Is the Dorsolateral Pallium of Rainbow Trout important for Learning during Aggression?** Russ E. Carpenter, Cliff H. Summers

11:20 – 12:20 **On the structural and functional organization of the brain stem,** Rudolf Nieuwenhuys

12:20 – 2:10 **Lunch break**

Afternoon Session

2:10 – 2:35 **Does fast-start circuitry contribute to pufferfish inflation?** Anna Greenwood, Katie Peichel, Steve Zottoli

2:35 – 3:00 **Brain circuits involved in electrosensory guided prey catching in the paddlefish,** Michael H Hofmann

3:00 – 3:25 **Peptide hormones enhance an electric communication signal via a cAMP\PKA pathway that regulates ion channel trafficking,** Michael R. Markham, Lynne McAnelly, Philip K. Stoddard, and Harold H. Zakon

3:25 – 3:45 **PM Break (20 minutes)**

3:45 – 4:10 **Spinal cord regeneration in tail autotomizing salamanders (*Plethodon cinereus*),** Ellen M. Dawley, Kenton Woodard, and Katie Mathias

4:10 – 4:35 **The Retinogeniculostriate Pathway Scales with Orbit Convergence and Binocular Visual Field Overlap in Mammals,** Christopher Paul Heesy

4:35 – 5:00 **Worm Grunting in the Apalachicola National Forest,** Kenneth C Catania

5:00 **Business Meeting and Book Give-away to Graduate Students**

6:00 Reception, Silent Auction

2009 KARGER WORKSHOP

Thursday, October 15, 2009
Congress Plaza Hotel Chicago, IL

Vision with an Eye to Ecology: A Tribute to Barrie Frost

Organized by:
Doug Wylie (University of Alberta)

7:45	**Coffee and breakfast**
8:45-9:00	Doug Wylie, University of Alberta, Canada **Introductory remarks: The vision and foresight of barrie frost.**
9:00-10:00	Shaun Collin, University of Queensland, Australia **An eye for (chromatic) detail: Assembling the pieces of an evolutionary puzzle.**
10:00-10:10	**Mini-break**
10:10-11:10	Craig Hawryshyn, Queen's University, Canada **Polarization vision and visually guided behaviour in fishes.**
11:10-11:30	**Coffee break**
11:30-12:30	Eric Warrant, Lund University, Sweden; invited speaker **The ecology of vision in darkness: Vision and visual behaviour in nocturnal insects.**
12:30-2:00	Lunch
2:00-3:00	Chris Heesy, Midwestern University, USA **Nocturnality and the evolution of mammalian visual ecology.**
3:00-4:00	Toru Shimizu, University of South Florida, USA **Evolution of visual telencephalic regions and their role in courtship and navigation in birds.**
4:00-4:25	**Coffee Break**
4:25-5:25	Barrie Frost, Queen's University, Canada **A taxonomy of visual motion detection and their underlying neural mechanisms.**
5:25-5:55	Harvey Karten, UC San Diego, and Andrew Iwaniuk, University of Lethbridge, Canada **General discussion and closing remarks**
6:00-7:00	**Reception**

2009 J.B. Johnston Club Annual Meeting

Friday, October 16, 2009
Congress Plaza Hotel, Chicago, IL

7:00-8:20 **Breakfast**

8:20-8:30 **Introduction,** Program Committee

8:30-8:55 Rodrigo Suárez & Jorge Mpodozis
Environmental, perceptual and behavioral aspects accounting for the remarkable diversity of the mammalian vomeronasal system.

8:55-9:20 Christine J. Charvet & Georg F. Striedter
Altricial and precocial birds evolved distinct developmental strategies to enlarge their telencephalon.

9:20-9:45 D. Gonçalves, M. Teles, J. Alpedrinha, J. Saraiva, R. Teodósio, A.V.M.C. Canário & R.F. Oliveira
Dual function of aromatase in the blenniid fish *Salaria pavo*: regulation of testicular investment and control of sexual behavior.

9:45-10:05 Christopher B. Braun
Jam or be jammed: Behavioral responses to interfering stimuli in pulse discharging weakly-electric gymnotiformes.

10:05 **Break (25 minutes)**

10:30-10:55 Shelby E. Temple, Nathan S. Hart & Shaun P. Collin
A spitting image: visual specializations of the archerfish (*Toxotes chatareus*).

10:55-11:20 Elke Buschbeck
The bizarre visual system of diving beetle larvae: from asymmetric spherical eyes to tubular eyes and scanning behavior.

11:20–12:20 Eric Warrant (Karger invited speaker)
Seeing in the dark: Inferring ecology from visual adaptations in the world's dimmest habitats.

12:20 – 2:10 **Lunch break**

Afternoon Session

2:10-2:35 Abigail R. Wark & Catherine L. Peichel
Lateral line variation among diverse populations of threespine stickleback (*Gasterosteus aculeatus*).

2:35-3:00 Jason R. Gallant & Carl D. Hopkins
Geographically isolated populations of *Paramormyrops kingsleaye* undergo rapid, paedamorphic electrical signal evolution.

3:00-3:25 Christina Burden & Gordon Atkins
Beyond species identity: cricket auditory systems process more than just a stereotyped call.

3:25-3:45 **Break (20 minutes)**

3:45-4:10 Johannes Schul
Qualitative differences in call recognition among sibling species.

4:10-4:35 Lisa A. Mangiamele & Sabrina S. Burmeister
Neural coding of conspecific signals in female túngara frogs (*Physalaemus pustulosus*).

4:35-5:00 Peter M. Narins
Convergence in ultrasonic communication in frogs.

5:00 **Business Meeting and Book Give-away to Graduate Students**

6:00 **Reception, Silent Auction**

NOTE: Graduate Students, avoid disappointment!! Be sure to enter your name in the Book Give-away. Forms will be available at the reception desk, and you must be at the Business Meeting to win!

2010 KARGER WORKSHOP

Thursday November 11, 2010; 8:30am-6:00pm
Horton Grand Hotel, San Diego, CA

Diversity in Cortical Organization
Organized by Jon H. Kaas (Vanderbilt University)

7:45 Coffee and breakfast

8:30-9:30 *Jon H. Kaas*, Vanderbilt University
How cortical areas vary in number and architecture

9:30-10:30 *Suzana Herculano-Houzel*, Federal University of Rio de Janeiro, invited speaker
Building a bigger brain: New views on brain scaling in evolution

10:30-11:00 Coffee break

11:00-12:00 *Christine Collins,* Vanderbilt University
Variability in neuron densities across the cortical sheet in primates.

12:00-2:00 Lunch break

2:00-3:00 *Leah Krubitzer,* University of California at Davis
Rats, all rodents are not the same.

3:00-4:00 *Zoltán Molnár,* University of Oxford
Evolution of cerebral cortical development.

4:00-4:30 Coffee Break

4:30-5:30 *Luis Puelles,* University of Murcia & CIBER in Rare Diseases
New alternative sources of cortical neurons and related structural variation.

5:30-6:00 *Jon H. Kaas,* Vanderbilt University
Round table discussion

6:00-7:30 Reception

2010 J.B. Johnston Club Annual Meeting
November 12, 2010
Horton Grand Hotel, San Diego, CA

7:00-8:30 **Breakfast**

8:30-8:40 **Introduction,** Program Committee

8:40-9:00 J. M. Simoes, M. Verhoye, A. Van der Linden, M. Teles, & R.F. Oliveira
A three-dimensional MRI brain atlas of the Mozambique Tilapia (*Oreochromis mossambicus*)

9:00-9:20 T. Mueller
Let's sin: A new model of the zebrafish forebrain

9:20-9:40 M.B. Pritz
Do early vertebrate brain subdivisions develop in similar or different ways?

9:40-10:00 C. Watson
The presumptive isthmic region in a mouse as defined by fgf8 expression

10:00 **Break (20 minutes)**

10:20-10:40 C.K. Thompson
Beyond language: translational implications of seasonal regression of the avian song control system as a model of neuroprotection

10:40-11:00 T.J. Stevenson & G. F. Ball
Are GnRH1 cells topographically organized? Plasticity in the songbird GnRH1 in response to photoperiod, gonadal and social cues

11:00-11:20 R.Y. Wong & M. E. Cummings
Brain regions associated with female mate preference behavior in a teleost

11:20-11:40 N.S. Hart & S.P. Collin
Cone monochromacy in sharks: colour-blind killers?

11:40-12:00 D. Heyers
How do birds sense the Earth's magnetic field?

12:00 – 1:45 Lunch break

Afternoon Session

1:45-2:00 Recognition of Carneiro Award winner: Mariana Gabi
Introduced by Shelby Temple, member of Carneiro Award Committee

2:00-2:20 P.L. Edds-Walton & R.R. Fay
Binaural sites in the ascending auditory circuit of a teleost fish, *Opsanus tau*

2:20-2:40 D.A. Mann
Ultrasound detection by clupeid fishes

2:40-3:00 B.A. Carlson, S.M. Hasan, M. Hollmann, & M.E. Arnegard
Signal diversification drives the evolution of novel patterns of brain organization

3:00-3:20 S.R. Wilkening & L.B. Day
Avian cerebellum specialization in relation to acrobatic courtship displays in manakins (Pipridae)

3:20-3:40 **Break (20 minutes)**

3:40-4:00 V. Schluessel, H. Bleckmann, R.G. Northcutt, & M.H. Hofmann
Morphometric comparison of telencephalic areas in selected vertebrates in relation to function

4:00-4:20 K.E. Yopak, S.M. Ainsley, D.A Ebert, & L.R. Frank
Exploring adaptive evolution in the brains of bathyal skates (Family: Rajidae): Phylogenetic and ecological perspectives

4:20-5:00 Suzana Herculano-Houzel
Evidence against a cortical takeover in mammalian brain evolution: coordinated scaling of cerebellar and cortical numbers of neurons

5:00 Business Meeting and Book Give-away to Graduate Students

6:00-8:30 Reception, Silent Auction

NOTE: Graduate Students, avoid disappointment!! Be sure to enter your name in the Book Give-away. Sign up at the reception desk. You must be at the Business Meeting to win!

2011 KARGER WORKSHOP

Thursday November 10, 2011; 8:30am-6:00pm
Embassy Row Hotel, 2015 Massachusetts Ave. NW, Washington, DC 20036

The Nervous System of Cartilaginous Fishes

Organized by Kara E. Yopak (University of Western Australia)

7:45 Coffee and breakfast

8:30-8:45 *Kara E. Yopak* (University of Western Australia)
Introduction and welcome

8:45-9:30 *John C. Montgomery* (University of Auckland) Special Invited Guest
The cerebellum and cerebellum-like structures of cartilaginous fishes

9:30-10:15 *Michael Hofmann* (University of Bonn)
R. Glenn Northcutt (University of California San Diego/Scripps Institution of Oceanography)
Neuroanatomy of the forebrain in elasmobranchs

10:15-11:00 **Coffee break**

11:00-11:45 Isabel Rodríguez-Moldes (University of Santiago de Compostela)
Contributions of developmental studies in the lesser spotted dogfish, *Scyliorhinus canicula*, to the understanding of brain anatomy in elasmobranchs

11:45-12:30 *Christopher Mull* (Simon Fraser University)
Connecting life-history and brain development in chondrichthyans: Using phylogenetic comparative analysis to examine the relationship between maternal investment and brain growth

12:30-2:30 **Lunch break**

2:30-3:15 *Shaun P. Collin* (University of Western Australia)
The neuroecology of cartilaginous fishes: Sensory strategies for survival

3:15-4:00 *Kara E. Yopak* (University of Western Australia)
Thomas J. Lisney (University of Alberta)
More than meets the eye: Scaling of the optic tectum across cartilaginous fishes

4:00-4:30 **Coffee Break**

4:30-5:15 *Barbara Wueringer* (University of Western Australia)
A review of elasmobranch electroreception: Sawfish as a case study

5:15-6:00 *Kara E. Yopak* (University of Western Australia)
Round table discussion

6:00-7:30 **Reception**

2011 J.B. Johnston Club Annual Meeting
November 11, 2011
Embassy Row Hotel, Washington DC

7:00-8:30 **Breakfast**

8:30-8:40 **Introduction,** Program Committee

8:40-9:00 M. Slane & J. Godwin
Is the neuropeptide kisspeptin a link between behavioral and gonadal sex change in the bluehead wrasse (*Thalassoma bifasciatum*)?

9:00-9:20 A.M. Lyons-Warren, T. Kohashi, S.Mennerick, & B.A. Carlson.
Novel intensity-dependent re-coding of submillisecond spike-timing differences.

9:20-9:40 J. Song, C. Fan, X. Wang, & X. Zhang
A Phylogenetic Survey of Morphological Patterns of Superficial Neuromasts in Teleost Fishes.

9:40-10:00 D. Soares
Novel sensory adaptation in a rare cavefish from the Andes.

10:00 **Break (20 minutes)**

10:20-10:40 S.J. Sterbing-D'Angelo, M. Chadha, C. Chiu, B. Falk, W. Xian, J. Barcelo, J.M. Zook , & C.F. Moss
Bat wing sensors improve flight maneuverability.

10:40-11:00 J.R. Barchi, J. M. Knowles, & A.M. Simmons
Flight dynamics and spatial memory in echolocating bats.

11:00-11:20 L. Day, R. Spence, B. Schlinger, J. Hamer, G. Stinson, & M. DiGiusto
The Role of the Zebra Finch Cerebellum in Cognition and Song.

11:20-11:40 J.M. Wild
Is there is more to Ov than meets the ear? Inputs to the ventromedial hypothalamus from the auditory thalamus and medial arcopallium in songbirds.

11:40-12:00 K.L. Willis, C.A. McCormick & C.E. Carr
Anatomy of turtle middle ear cavities and hindbrain auditory circuits.

12:00-12:20 P.M. Narins & S.W. Meenderink
Matching of inner ear sensitivity to call frequency in the coqui frog.

12:20-12:30 Recognition of Carneiro Award winner.

12:30-2:00 **Lunch Break**

1:45-2:00 Recognition of Carneiro Award winner: Karina Fonseca Azevedo

2:00-2:20 C. J. Charvet, R.B. Darlington & B.L. Finlay
Brain scaling across vertebrates: conservation and variation.

2:20-2:40 S. Herculano-Houzel
An expensive matter: Brain scaling with a constant energetic cost per neuron and its implications for brain evolution.

2:40-3:00 L. Lefebvre
Data transformations affect conclusions on brain part co-evolution and encephalization in primates.

3:00-3:20 J.I. Johnson, K.J. Buchanan, B.A. Fenske, & A.S. Yalamarthy
The Pig and the Puddling Claustrum

3:20-3:40 **Break (20 minutes)**

3:40-4:00 M. Yoshizawa
Evolution of the nervous system adapts Astyanax to life in darkness.

4:00-4:20 P.J. Park, I. Chase, & M.A. Bell
The Relationship Between Telencephalon Morphology and Spatial Learning of the Threespine Stickleback Fish (Gasterosteus aculeatus) in Relation to Inferred Ecology

4:20-5:00 John Montgomery
Do cerebellum and cerebellum-like structures share the same functional algorithm?

5:00-5:15 A. Fishman
Everything you wanted to know about comparative studies

5:15 **Business Meeting and Book Give-away to Graduate Students**

6:00-8:30 Reception, Silent Auction

NOTE: Graduate Students, avoid disappointment!! Be sure to enter your name in the Book Give-away. Sign up at the reception desk. You must be at the Business Meeting to win!

2012 KARGER WORKSHOP IN EVOLUTIONARY NEUROSCIENCE
Thursday, October 11, 2012; 8:30am-6:00pm
Bourbon Orleans Hotel, New Orleans, LA

Evolution of Brain Complexity and Animal Minds

Organized by Leo S. Demski (New College of Florida)

7:30-8:30 Coffee and breakfast

8:30-8:45 *Leo S. Demski* (New College of Florida)
Introduction and welcome

8:45-9:45 *Sarah M. Farris* (Morgantown University)
Relationships between brain and behavioral complexity in insects

9:45-10:45 *Binyamin Hochner* (Hebrew University) Special Invited Guest
The brain/body/behavior organization in an animal with an unusual morphology—an 'embodied' view on the organization of the nervous system of *Octopus vulgaris*

10:45-11:15 **Coffee break**

11:15-12:15 *Leo S. Demski* (New College of Florida)
"Brainy" fishes: considerations of neural complexity and mental diversity

12:15-2:00 **Lunch break**

2:00-3:00 *R. Glenn Northcutt* (University of California at San Diego)
Variation in reptilian brains and cognition

3:00-3:30 **Coffee Break**

3:30-4:30 *Georg F. Striedter* (University of California at Irvine)
What is it like to be a bird? Insights from avian brains and avian behavior

4:30-5:30 *Paul R. Manger* (University of the Witwatersrand)
Three evolutionary trajectories for evolving large brains in humans, elephants and cetaceans: similarities and differences in the over 700g club

5:30-6:00 **Round table discussion**

6:00-7:30 **Reception**

Keeping the J. B. Johnston Club going is a group effort, and we want especially to thank the following:

Program committee:
Ann Butler, Chair
Barbara Finlay
Michael Pritz

Mary Sue Northcutt: Hotel reservations and general advice

Katie Willis: Book sale

Awards Committee for Luis Carneiro Memorial Student Travel Award:
Shelby Temple, Chair
Kara Yopak
Catherine Carr

Georg Striedter, editor
Brain, Behavior, and Evolution

Past Carneiro Award Winners
2010: Mariana Gabi, Federal University of Rio de Janeiro, Suzana Herculano-Houzel, Mentor

2011: Karen Fonseca Azevedo, Federal University of Rio de Janeiro, Suzana Herculano-Houzel, Mentor

2012 J. B. Johnston Club Annual Meeting
October 12, 2012
Bourbon Orleans Hotel, New Orleans, LA

7:00-8:15 **Breakfast**

8:15-8:20 **Introduction,** Program Committee

8:20-8:40 Suzana Herculano-Houzel, Charles Watson, & George Paxinos
Distribution of neurons across the surface of the mouse cerebral cortex.

8:40-9:00 Pedro F. M. Ribeiro, Lissa Ventura, Léa T. Grinberg, Ranata E.P. Leite, Renata E.L.Ferretti, José Marcelo Farfel, Wilson Jacob Filho, & Suzana Herculano-Houzel
Distribution of neurons across the surface of the human cerebral cortex.

9:00-9:20 Bruno Mota & Suzana Herculano-Houzel
To what extent do glial invariance and variable neuron mass explain the distinct scaling rules for the cortical shape and composition of different mammalian orders?

9:20-9:40 Pooja Balaram, Roger L. Reep, & Jon H. Kaas
Cytoarchitectonic characteristics of the cerebral cortex of the nine-banded armadillo (*Dasypus novemtinctus*).

9:40-10:10 **Break (30 minutes)**

10:10-10:30 Christopher B. Braun, Zachary Baldwin, & John S. Sparks
Auditory specialization within the cichlidae: morphological specializations and performance enhancements in Malagasy-South ~~African~~ ASIAN cichlids.

10:30-10:50 John B. Phillips
Photoreceptors sensitive to the earth's magnetic field in the frontal organ of bullfrogs.

10:50-11:10 Kenneth Catania
Internasal intensity cues provide directional sniffing information.

11:10-11:30 Joseph C. Gaspard III, Roger L. Reep, Gordon B. Bauer, Kimberly Dziuk, Katherine Nicolaisen, Laura Denum, & David A. Mann
Hydrodynamic stimuli detection by Florida manatees (*Trichechus manatus latirostris*).

11:30-11:50 Nina Patzke, Amadi O. Ihunwo, & Paul R Manger
Comparative analysis of environmental complexity on adult hippocampal neurogenesis in wild living animals.

The preliminarty program for the 2013 Karger Workshop in Evolutionary Neuroscience is shown below.

25TH KARGER WORKSHOP IN EVOLUTIONARY NEUROSCIENCE

Organizer: Chet C. Sherwood, The George Washington University

The Problem of Human Brain Evolution: Integrating Diverse Approaches

Christine Charvet

Cornell University

charvetcj@gmail.com

Title: *Cortical variation evolves through gradients*

Asif Ghazanfar

Princeton University

asifg@princeton.edu

Title: *The dynamics, development and evolution of the speech rhythm*

Genevieve Konopka

University of Texas, Southwestern Medical Center

genevieve.konopka@utsouthwestern.edu

Title: *Decoding the molecular evolution of human cognition using comparative genomics*

Simon Neubauer

Max Planck Institute for Evolutionary Anthropology

simon.neubauer@eva.mpg.de

Title: *Endocranial casts: a paleoanthropologcal perspective on human brain evolution*

Katerina Semendeferi

University of California, San Diego

ksemende@ucsd.edu

Title: *Comparative neuroanatomy of apes and humans: old techniques, new tools*

Chet Sherwood

The George Washington University

sherwood@gwu.edu

Title: *Spatiotemporal variation in human neocortical evolution*

Special Invited Guest Speaker

Richard Passingham

University of Oxford

dick.passingham@psy.ox.ac.uk

Title: *Is the prefrontal cortex especially enlarged in the human brain?*

2013 J. B. Johnston Club Annual Meeting
November 8, 2013
Horton Grand Hotel, San Diego, CA

7:00-8:15 **Breakfast**

8:15-8:20 **Introduction,** Program Committee

8:20-8:40 Bruno Coelho César Mota & Suzana Herculano-Houzel
A model for propagation time optimization in the spinal cord and a method for testing it

8:40-9:00 Sandra E. Dos Santos, Anna Maria Grimaldi, Graziano Fiorito, & Suzana Herculano-Houzel
Quantitative study of the Octopus nervous system: divergence between Mediterranean and Brazilian *Octopus vulgaris* species

9:00-9:20 Paula Pouso & Ana Silva
Social behavior network activation in the courtship of a weakly pulse-type electric fish.

9:20-9:40 Dominik Heyers
Nature´s GPS: a vision-based compass and a trigeminal-based map in birds?

9:40-10:10 **Break (30 minutes)**

10:10-10:30 Mary K.L. Baldwin, Pooja Balaram, & Jon H. Kaas
Evolution of the pulvinar/lateral posterior complex in Euarchontoglires: insights from connection patterns and VGLUT2 immunohistochemistry

10:30-10:50 Lainy B. Day, Steven R. Wilkening, Claire Giuliano, Justin Houck, & Willow R. Lindsay
Brain specializations in relation to courtship display complexity in manakins (Pipridae) with discovery of novel behaviors in several species

10:50-11:10 Cristián Gutiérrez-Ibáñez, Andrew N. Iwaniuk & Douglas R. Wylie
Mosaic and concerted evolution in the visual system of birds.

11:10-11:30 Jeroen B. Smaers
Mammalian brain organization as an evolutionary landscape

11:30-11:50 Suzana Herculano-Houzel, Kleber Neves, Kamilla Avelino, Débora Messeder, Rodrigo Siqueira, Isabele Pio, Larissa Mattos, & Paul R. Manger
The brains of African mammals in numbers: implications for brain evolution

11:50-12:00 Recognition of Thomas Karger Award winner:

12:00-1:30 **Lunch Break**

1:30-1:50 Robert Barton & Chris Venditti
The evolution of human frontal lobe size: allometry and adaptation

1:50-2:10 T. Duka, Z. Collins L. Grossman, M. Uddin, D.E. Wildman, M. Goodman, S.J. Schapiro, M.J. McArthur, W.B. Baze, P.R. Hof, & C.C. Sherwood
The interplay between synaptic reorganization, mitochondrial density, and expression of neuronal glucose transporter, GLUT3, in chimpanzee neocortical development

2:10-2:30 Louis Lefebvre
Brains, innovations, tools and colonization success in hominins

2:30-2:50 Harry J. Jerison
Fossil brains

2:50-3:00 Recognition of Carneiro Award winner

3:00-3:20 **Break (20 minutes)**

3:20-3:50 R.E. Passingham
Why did prefrontal cortex evolve in primates?

3:50-5:00 **Datablitz (10 participants)** Christa Baker (Washington U.), Pooja Balaram (Vanderbilt University), Daniel Hoops (Australian National University), Tsunehiko Kohashi (Washington U.), Natasha Meyer O'Brown (Stanford), Kleber Neves de Almeida (UFRio), Brian Powell (Duke), Kamilla Souza (UFRio), Chris Thompson (Scripps), Lissa Ventura (UFRio)

5:00-6:00 **Business Meeting and Book Give-away to Graduate Students**

6:00-9:00 **Reception, Silent Auction**

26th Annual Karger Workshop in Evolutionary Neuroscience
November 13, 2014
The Fairfax at Embassy Row Hotel, Washington DC

The Neurobiology and Behavior of Predators and Prey

Organized by Elizabeth Catania and Kenneth Catania, Vanderbilt University

7:30 – 8:30 **Breakfast**

8:30 – 8:45 **Introduction**

8:45 – 9:30 **Cynthia Moss**, Johns Hopkins University
Competitive interactions among insectivorous bats

9:30 – 10:15 **Catherine Carr,** University of Maryland
Where is it? How accurate are sound localization circuits?

10:15 – 10:45 **Coffee Break**

10:45 – 11:30 **Paloma T. Gonzalez-Bellido**, University of Cambridge
The tiny Killer Fly *C. attenuata* estimates relative prey size prior to launching an aerial attack.

11:30 – 12:15 **Malcolm A. MacIver**, Northwestern University
Vision versus electrosense: Swim mechanics and sensing in the prey capture behavior of larval zebrafish compared to electric knifefish

12:15 – 1:00 **Kenneth C. Catania**, Vanderbilt University
Defeating prey escape

1:00 – 2:30 **Lunch Break**

2:30 – 3:15 **Ashlee Rowe**, Michigan State University
The role of neurotoxins and their ion channel targets in sensory adaptations that mediate predator-prey interactions

3:15 – 4:00 **Edmund D. Brodie III**, University of Virginia
Sodium channel evolution in the arms race between predator and prey

4:00 – 4:30 **Coffee Break**

4:30 – 5:30 Special Invited Guest: **Baldomero Olivera,** University of Utah
The venomous cone snails: generating biodiversity by evolving novel neuropharmacology

5:30 – 6:00 **Roundtable Discussion**

6:00 – 7:30 **Reception**

2014 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
November 14, 2014
The Fairfax at Embassy Row Hotel, Washington DC

7:00-8:00 **Breakfast**

8:00-8:10 **Introduction/Welcome**, Program Committee

8:10-8:25 **Michael Markham**
Energetics of active sensory and communication signals in the weakly electric fish *Eigenmannia virescens*: organismal, cellular, and molecular perspectives

8:25-8:40 **Christa Baker et al.**
Evolutionary divergence in peripheral sensory coding strategies in mormyrid weakly electric fishes

8:40-8:55 **James Liao et al.**
Sensory and motor responses to lateral line stimulation in larval zebrafish

8:55-9:10 **Hamilton Farris and Abhilash Ponnath**
Descending modulation of auditory processing in the amphibian midbrain

9:10-9:25 **Cole Gilbert et al.**
Dynamic visual cues trigger jaw opening and closing by tiger beetles during pursuit of prey.

9:25-9:40 **Cynthia Harley and Karen Mesce**
The eyes have it: the visual guidance of host localization and escape in the medicinal leech

9:40-9:55 **Paul Katz et al.**
A diversity of neuromodulatory actions and synaptic connections underlies the evolution of swimming behaviors in nudibranch sea slugs.

9:55-10:25 **Break** (30 minutes)

10:25-10:40 **Christine Charvet et al.**
The central role of time in establishing connections in development and in evolution

10:40-10:55 **Aida Gómez-Robles et al.**
Quantitative genetics and the evolution of the human brain

10:55-11:15 **Mariana Gabi et al.**
No relative expansion of the prefrontal cortex in primate and human evolution

11:15-11:30 **Andrey Vyshedskiy**
Hominin evolution: greater control of the visual percept by the prefrontal cortex evolved as a result of selective pressure from immobile, camouflaged predators.

11:30-11:45 **Carlos Salas et al.**
Brain scaling and allometric variation of sensory brain regions in lampreys (Petromyzontiformes)

11:45-12:00 **Kara Yopak et al.**
Is bigger always better? Developing quantitative measures of cognitive ability in early vertebrates

12:00-12:15 **Kimberley Sukhum et al.**
The costs of extreme encephalization: bigger brains result in increased energetic demand and reduced hypoxia tolerance in weakly electric African fishes.

12:15-12:20 **Carneiro Award Presentation**

12:20-1:45 **Lunch Break**

1:45-2:00 **Seweryn Olkowicz et al.**
Bird brains have extraordinarily high neuron densities.

2:00-2:15 **Tom Smulders et al.**
Spatial memory of food-hoarding birds: cued or free recall?

2:15-2:30 **Andrew Iwaniuk**
Drumming 'thunder chickens': the ethology and neurobiology of a non-vocal courtship display

2:30-2:40 **Karger Award Presentation**

2:40-3:25 **Karger Special Invited Guest: Baldomero Olivera**
Using fish-hunting cone snails to understand nervous system complexity

3:25-3:55 **Break** (30 minutes)

3:55-5:00 **DataBlitz**: Zack Ghahramani; Jonathan Perelmuter; Miky Timothy; Serena Bianchi; Laura Reyes; Felipe Barros da Cunha; Nina Patzke; Lissa Ventura-Antunes; Kleber Neves; Yue Ban; Hiliary Riedmann; Daniel Hoops

5:00-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

27th Annual Karger Workshop in Evolutionary Neuroscience

Thursday, October 15, 2015 7:30am - 7:30pm
Congress Plaza Hotel and Convention Center, Chicago, Illinois

The Role of Adult Neurogenesis in Plasticity: Evolutionary Insights

Organized by Alice Powers, Stony Brook University

7:30-8:30 **Breakfast**

8:30-8:45 **Alice Powers**
Introduction and welcome

8:45-9:30 **Barbara Beltz,** Wellesley College
From blood to brain: Cells from the immune system generate adult-born neurons.

9:30-10:15 **Kent Dunlap,** Trinity College, Hartford CT
Social interaction, predator exposure and brain cell proliferation in teleost fish

10:15-10:45 **Coffee Break**

10:45-11:30 **Alice Powers,** Stony Brook University
The role of experience in adult neurogenesis in turtles

11:30-12:15 **Lara LaDage,** Penn State, Altoona
Factors that modulate neurogenesis in lizards: a top-down approach

12:15-1:45 **Lunch Break**

1:45-2:30 **Carolyn Pytte**, City University of New York, Queens College
Behavioral regulation of lateralized adult neurogenesis in the song bird

2:30-3:15 **Luca Bonfanti**, University of Turin
Postnatal and adult neurogenesis in aquatic mammals devoid of olfaction

3:15-3:45 **Coffee Break**

3:45-4:30 **Hans-Peter Lipp**, University of Zurich and Kwazulu-Natal Durban
Adult hippocampal neurogenesis in natural populations of mammals: is more always better?

4:30-5:15 **Øyvind Øverli**, Norwegian University of Life Sciences
Special Invited Guest
On the role of neurogenesis and neural plasticity in the evolution of animal personalities and stress coping styles

5:20-6:00 **Round table discussion**

6:00-7:30 **Reception**

2015 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
October 16, 2015
The Congress Plaza Hotel, Chicago, IL

7:30-8:20 **Breakfast**

8:20-8:30 **Introduction/Welcome**, Program Committee

8:30-8:50 **Erin E. Mattson and Christopher D. Marshall**
Evolutionary implications of Pinniped vibrissal innervation

8:50-9:10 **Douglas R. Wylie, Joel Aspden, Cristian Gutierrez-Ibanez, Andrew N Iwaniuk and Daniel Hoops.**
Evolution of the cerebellum in light of the expression of Zebrin II (aldolase C) in the cerebellum of mammals, birds, and non-avian reptiles

9:10-9:30 **Andrew C. Halley**
Meta-analysis of ontogenetic brain/body allometry across mammals: Implications for primate encephalization and fetal growth theories of relative brain size

9:30:9:50 **Suzana Herculano-Houzel**
Decreasing sleep requirement with increasing numbers of neurons as a driver for bigger brains and bodies in mammalian evolution

9:50-10:20 **Break** (30 Minutes)

10:20-10:40 **Luke P. Tyrrell and Esteban Fernández-Juricic**
The hawk-eyed songbird

10:40-11:00 **Hamilton Farris, Robert Rosencrans, Ian Wisecarver, Sharon Fellner, David Vumbaco, William Gordon, Corinne Richards-Zawacki, and Nicolas Bazan**
Retinal sensitivity in four species of frogs from habitats with different light regimes.

11:00-11:20 **Shyam Srinivasan, C. Nikoosh Carlo, and Charles F. Stevens**
Predicting visual acuity from the structure of visual cortex

11:20-11:40 **Dylan W. Miller, Matthew Rowe, and Ashlee Rowe**
To sting or not to sting? Intersexual comparison in stinging behavior and venom effects in the scorpion species *Centruroides vittatus*

11:40-12:00 **Kenneth C. Catania**
Active electroreception in the electric eel (*Electrophorus electricus*)

12:00-1:30 **Lunch Break**

1:30-1:50 **Bailey Porter, Gage Stevens, and Thomas Mueller**
Analysis of isl1-GFP, tyrosine hydroxylase (TH), GABA, and parvalbumin in the basal ganglia of adult zebrafish reveals similarities to tetrapod situation

1:50-2:10 **Sara D. Cardoso, David Gonçalves, Alexander Goesmann, Adelino V. M. Canário, and Rui F. Oliveira**
Brain transcriptome analysis of alternative reproductive tactics in a blenniid fish

2:10-2:30 **Paul Forlano**
Neuroanatomical evidence for catecholamines as modulators of auditory-driven social behavior in a vocal fish

2:30 -2:50 **Alejandro Vélez, Tsunehiko Kohashi, and Bruce A. Carlson**
Similar changes in neuronal circuitry mediate parallel evolutionary change in sensory perception of communication signals in weakly electric fish

2:50-3:10 **Esteban Fernandez-Juricic, AL Shoemaker, MM Nelson, and BA Moore**
What makes a head turn? Vigilance behavior is associated with biomechanical constraints and retinal configuration in birds

3:10-3:35 **Break** (25 minutes)

3:35-3:50 **Carneiro Award Presentation**
Karger Award Presentation

3:50-4:30 **Karger Special Invited Guest Oyvind Overli**
Reduced neural plasticity and depression like behaviour after stress: Pathology or adaptation?

4:30-5:10 **DataBlitz: Reyes; de Souza; Schilder; Hagio; Kraemer; Messeder; Ramamurthy; Rodrigues da Hora**

5:10-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

Foundational support for this Program has been provided by a 2015 Special Financial Award from Karger Publishers in celebration of their 125th Anniversary.

28th Annual Karger Workshop in Evolutionary Neuroscience

Thursday, November 10, 2016 7:30am - 7:30pm

Horton Grand Hotel, San Diego

The Hippocampus: questions of homology

Organized by Anat Barnea (The Open University, Israel) and Tom V. Smulders (Newcastle University, UK)

7:30-8:40 **Breakfast**

8:40-8:50 Introduction and welcome

8:50-9:25 **Ann Butler**, George Mason University, USA
Of Horse-caterpillars and Homologies

9:25-10:10 **Loreta M. Medina Hernandez**, Institut of Biomedical Research, Lleida, Spain
Contribution of genoarchitecture for understanding hippocampal evolution and development

10:10-10:40 **Coffee break**

10:40-11:25 **David F. Sherry**, Western University, Canada
Are there place cells in the avian hippocampus?

11:25-12:10 **Onur Güntürkün**, Ruhr-University Bochum, Germany
The intrahippocampal network in pigeons

12:10-1:40 **Lunch Break**

1:40-2:25 **Verner Bingman**, Bowling Green, USA
The avian hippocampus, navigating space and the riddle of the dentate gyrus

2:25-3:10 **Anat Barnea**, The Open University of Israel
Relationship between brain plasticity, migratory behavior, and relocation distance in birds

3:10-3:40 **Coffee Break**

3:40-4:25 **Tom V. Smulders**, Newcastle University, UK
Responses to stress in the avian hippocampus

4:25-5:25 **Menno P. Witter**, Kavli Institute for Systems Neuroscience, Norway
Special Invited Guest
All hippocampi are equal, but are some more equal than others?

5:25-6:00 **Round table discussion**

6:00-7:30 **Reception**

2016 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
Friday, November 11, 2016
The Horton Grand Hotel, San Diego, CA

7:00-8:20 **Breakfast**

8:20-8:30 **Introduction/Welcome**, Program Committee

8:30-8:50 **Brian M. Schilder, Brenda J. Bradley and Chet C. Sherwood**
The evolution of human hippocampal gene expression

8:50-9:10 **Tom V. Smulders, Fabio Gualtieri, Elena A. Armstrong, Barbara-Anne Robertson, Georgia Longmoor, Julia George, Giselda Cirillo, Lucy Rathbone, Ian C. Dunn, Peter W. Wilson, Rick B. D'Eath, Victoria Sandilands, David F. Clayton and Timothy Boswell**
Does avian adult hippocampal neurogenesis respond to chronic stress?

9:10-9:30 **Jean-Nicolas Audet, Louis Lefebvre, Lima Kayello, Simon Ducatez, Lauren A. O'Connell and Erich D. Jarvis**
Neurotransmitter receptor expression differences between innovative and conservative sister species of Barbados finches

9:30-9:50 **Kei Yamamoto and Philippe Vernier**
More convergence than conservation? Comparative analyses of dopamine systems in Osteichthyes

9:50-10:10 **Malcolm A. MacIver and Lars Schmitz**
A doubling of eye size and massive increase in visual range enabled complex visually guided behaviors in the first terrestrial vertebrates

10:10-10:40 **Break** (30 Minutes)

10:40-11:00 **Kenneth C. Catania**
Of Humboldt, horses, and leaping electric eels – How eels turn up the volume

11:00-11:20 **Rodrigo Suárez**
How do claustro-insular bilateral circuits relate to the evolution of the corpus callosum?

11:20-11:40 **Katie L. Willis and Jeffrey S. Chrabaszcz**
Exploring statistical methods for measuring and classifying neurons

11:40-12:00 **Lainy Day**
Questioning the assumptions of scaling brain size for body size

12:00-1:30 **Lunch Break**

1:30-1:50 **Bruno Mota and Suzana Herculano-Houzel**
How many degrees of freedom does a cortex need? The implications of a simple universal theory for cortical morphology

1:50-2:10 **Leo S. Demski**
The hypertrophied pallium in squirrelfish: a model for a "fishy" visuomotor "cortex"

2:10-2:30 **Steven Rose, Ashraf Uddin, Clare Rusbridge, Jelena Jovanovik, Johnny C. Ng, Victoria X. Wang, Cheuk Tang, Patrick R. Hof, Chet C. Sherwood, Geoffrey K. Aguirre, Ritobrato Datta, Paul R. Manger and Muhammad A. Spocter**
The effect of domestication on cortical folding in wild and domestic canids

2:30-2:50 **Robert K. Naumann, Maria A. Tosches, Christian M. Müller and Gilles Laurent**
A comparative study of the reptilian and mammalian cortex combining chemoarchitecture, genoarchitecture, and tract-tracing

2:50-3:10 **Georg F. Striedter and R. Glenn Northcutt**
The central role of olfaction in the evolution of the vertebrate telencephalon

3:10-3:40 **Break** (30 minutes)

3:40-4:00 **Carneiro Award Presentation**
Karger Award Presentation

4:00-4:40 **Karger Special Invited Guest Menno P. Witter**
Functional organization of the entorhinal cortex: a cross-species analysis

4:40-5:00 **DataBlitz**
Christa Baker, Yue Ban, Baylee Porter, Elisabeth Weise

5:00-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

29th Annual KARGER WORKSHOP

Workshop Theme

From fossils to function:
integrative and diverse approaches
to vertebrate evolutionary neuroscience

November 9th, 2017*
College Park Marriott
Hyattsville, Maryland

General Discussion Topics

- *Comparative studies of brains in a wide array of extant vertebrate taxa, with special focus on groundbreaking structural and functional neuroimaging techniques*
- *Best practices for the inference, reconstruction, and comparative investigation of endocranial soft-tissue structures in extinct vertebrate taxa*
- *Moving towards research that embraces an integrative approach (i.e., incorporating evidence from extinct and extant taxa), with an emphasis on deliberate, incremental studies of nervous system form and function within and across Vertebrata.*

Please see the Karger Workshop schedule and talk descriptions on the following pages.

Have questions? Please contact the workshop organizer,
Dr. Ashley Morhardt (email: amorhardt@wustl.edu).

**Workshop will immediately precede the regular meeting of the J. B. Johnston Club (JBJC) on November 10, 2017.*

29th Annual KARGER WORKSHOP

Workshop Schedule

Time	*Event*
7:30--8:50 AM	*Breakfast*
8:50--9:00 AM	*Introduction and welcome*
9:00--9:45 AM	*Dr. Andrew Iwaniuk* *Department of Neuroscience, Canadian Centre for Behavioural Neuroscience, University of Lethbridge* ***"Inferring sensory ecology from brain morphology"***
9:45--10:30 AM	*Drs. Amy Balanoff** and Gabe Bever* *Center for Functional Anatomy and Evolution, Johns Hopkins School of Medicine* ***"The brain to endocast relationship along the avian stem: neuroanatomy in deep time"***
10:30--11:00 AM	*Coffee Break*
11:00--11:45 AM	*Dr. Emiliano Bruner* *Centro Nacional de Investigación sobre la Evolución Humana* ***"Human paleoneurology and the evolution of the parietal cortex"***
11:45 AM--12:30 PM	*Dr. Haley O'Brien* *Department of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences* ***"Exploring the evolutionary role of neurophysiology through phylogenetic evolutionary frameworks"***
12:30--2:00 PM	*Lunch Break*
2:00--2:45 PM	*Drs. Paul Gignac** and Nathan Kley* *Department of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences* *Department of Anatomical Sciences, Stony Brook School University* ***"Iodine on the brain: The utility of diceCT imaging for high-throughput comparative neuroanatomical studies"***
2:45--3:30 PM	*Dr. James Rilling* *Departments of Anthropology, Psychiatry and Behavioral Sciences, Yerkes National Primate Research Center, Center for Translational Social Neuroscience, Emory University* ***"Comparative Primate Connectomics"***
3:30--4:00 PM	*Coffee Break*
4:00--5:00 PM	*Special Invited Guest Speaker: Dr. David Van Essen* *Department of Neuroscience, Washington University School of Medicine in St. Louis* ***"Evolution of cerebral cortex in humans and non-human primates"***
5:00--6:00 PM	*Roundtable Discussion*
6:00--7:00 PM	*Reception*

***indicates presenter*

29th Annual KARGER WORKSHOP

Talk Descriptions

Dr. David Van Essen – Special Invited Guest Speaker
Department of Neuroscience, Washington University School of Medicine in St. Louis
"Evolution of cerebral cortex in humans and non-human primates"
Human cerebral cortex is 3-fold larger than in great apes and 10-fold larger than the intensively studied macaque monkey. Cortical expansion in the human lineage was highly nonuniform, as regions involved in higher cognitive function expanded preferentially. Topics to be discussed include the degree to which human cortical evolution involved increases in the number as well as size of areas and what we hope to learn about evolutionary changes in patterns of cortical connectivity.

Dr. Andrew Iwaniuk
Department of Neuroscience, Canadian Centre for Behavioural Neuroscience, University of Lethbridge
"Inferring sensory ecology from brain morphology"
The morphology of the brain reflects many aspects of an animal's lifestyle, especially foraging behaviour and sensory abilities. I will argue that the anatomy of the brain and cranial nerves can provide crucial insights into the sensory ecology of intractable and extinct species and the lack of sufficient quantitative measurements in extinct species is hindering our ability to infer their sensory abilities.

*Drs. Amy Balanoff** and Gabe Bever*
Center for Functional Anatomy and Evolution, Johns Hopkins School of Medicine
"The brain to endocast relationship along the avian stem: neuroanatomy in deep time"
Understanding the degree of correspondence between brains as they appeared during life and endocasts derived from fossils is critical for studying neuroanatomy in deep time. Here we use extant taxa to provide a validation of morphological and volumetric interpretations of endocasts and their ability to inform those inferences made within stem taxa.

Dr. Emiliano Bruner
Centro Nacional de Investigación sobre la Evolución Humana
"Human paleoneurology and the evolution of the parietal cortex"
The most apparent morphological changes in modern human brain form deals with the parietal surfaces. A remarkable variation among hominids and among humans suggests that some areas of the precuneus and of the intraparietal sulcus, associated with visuospatial integration, may have undergone important changes in our evolutionary lineage.

Dr. Haley O'Brien
Department of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences
"Exploring the evolutionary role of neurophysiology through phylogenetic evolutionary frameworks"
Specializations in brain regions, functions, and physiologies are often thought to play influential roles in driving evolutionary mechanisms. This talk uses selective brain cooling physiology as a case study to explore multiple phylogenetically-framed methods for linking characters with diversification rates, including trait-dependent diversification rate calculations for binary, multi-state, and continuous datasets.

*Drs. Paul Gignac** and Nathan Kley*
Department of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences
Department of Anatomical Sciences, Stony Brook School University
"Iodine on the brain: The utility of diceCT imaging for high-throughput comparative neuroanatomical studies"
In this study, we discuss the utility of diffusible iodine-based contrast-enhanced computed tomography (diceCT) for rapid visualization of both external and internal brain anatomy, alongside complete peripheral nerve pathways and the structures they innervate. We demonstrate the potential for developing high-resolution, neuroanatomical datasets and describe a pipeline to image large numbers of specimens for evolutionary study across Vertebrata.

Dr. James Rilling
Departments of Anthropology, Psychiatry and Behavioral Sciences, Yerkes National Primate Research Center, Center for Translational Social Neuroscience, Emory University
"Comparative Primate Connectomics"
This talk will draw on histological and neuroimaging data to compare brain connectivity across primate species, including humans. Implications for human brain evolution will be highlighted.

Workshop Organizer: Dr. Ashley Morhardt, Department of Neuroscience, Washington University School of Medicine in St. Louis

***indicates presenter*

2017 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
November 10, 2017
College Park Marriott in Hyattsville, MD

7:30-8:30 **Breakfast**

8:30-8:40 **Introduction/Welcome**, Program Committee

8:40-8:55 **Andrew C. Halley, Mary K.L. Baldwin, S Murray Sherman and Leah Krubitzer**
Scaling of thalamic nuclei in primates, rodents and carnivores

8:55-9:10 **Catherine M. Early, Ryan C. Ridgely and Lawrence M. Witmer**
Assessing the utility of avian brain endocasts as predictors of vision-related neuroanatomy and potential functional capabilities

9:10-9:25 **Ian Glidden, Paul R. Manger, Rachel H. Dunn and Muhammad A. Spocter**
Using 3D surface data to reconstruct the sulcal morphology of fossil and extant canids

9:25-9:40 **Cristian Gutierrez-Ibanez, Andrew N. Iwaniuk and Douglas R. Wylie**
Enlargement of telencephalic-cerebellar pathways in parrots: Convergent evolution with primates?

9:40-9:55 **Lara D. LaDage, Yee-Eun Kim, Thomas Neuberger, and Gangchea Lee**
Measuring the effects of environmental complexity on telencephalon volume using high-field magnetic resonance imaging (MRI) in a lizard species

9:55-10:10 **Break** (15 Minutes)

10:10-10:40 **Karger Special Invited Guest: David Van Essen**
Parcellation of cerebral cortex in humans and non-human primates.

10:40-10:55 **Daniel J. Miller and Jon H. Kaas**
Evolution of high-acuity circuitry in the primate primary visual cortex

10:55-11:10 **David R. Vanier DR, B.M. Schilder BM, C.C. Sherwood and J.B. Smaers**
Comparative neuroanatomy of navigational maps in primates

11:10-11:25 **Sandra E. Dos Santos, Louise Botelho, Marcelle Medeiros, Jairo Porfirio, Débora Messeder and Suzana Herculano-Houzel**
Invariant microglial cells densities suggest conserved developmental and evolutionary mechanisms governing their addition to mammalian brains

11:25-11:40 **Lissa Ventura-Antunes, Louise Botelho, Felipe Tenorio, Marina Ricardo, Gabriela Gomes and Suzana Herculano-Houzel**
Quantitative analysis of neural cells in different structures of the murine brain reveals that the energetic intake is constrained by the neuronal density of the tissue

11:40-11:55 **Suzana Herculano-Houzel**
Longevity is predicted by absolute number of pallial neurons, not body size, brain size or metabolic rate, across mammalian and bird species alike

11:55-1:30 **Lunch Break**

1:30-1:45 **Christa A. Baker, Xiao-Juan Guan, Micah Fletcher and Mala Murthy**
Specification of male versus female acoustic communication behaviors in *Drosophila virilis*

1:45-2:00 **Christopher B. Braun and José Alves-Gomes**
The vocabulary of communication in pulse gymnotiforms: Jamming avoidance and beyond

2:00-2:15 **Katie L. Willis and Catherine E. Carr**
Tonotopy and time difference sensitivity in turtles

2:15-2:30 **Jonathan T. Perelmuter, Joseph A. Sisneros and Paul M. Forlano**
What is the natural biological function of dopamine in the peripheral auditory system and does the plainfin midshipman fish have an answer?

2:30-2:45 **Solal Bloch, Manon Thomas and Kei Yamamoto**
Mesencephalic origin of the inferior lobe and the preglomerular nucleus in zebrafish

2:45-3:00 **Break** (15 minutes)

3:00-3:15 **W. Ted Allison and A. Phil Oel**
Duplicitous retina: Development suggests that rods evolved from UV-sensitive cones

3:15-3:30 **Spencer Balay S and Ted W. Allison**
The mysteries of magnetoreception: The role of UV cones in zebrafish cryptochrome expression

3:30-3:45 **Georg F. Striedter and R. Glenn Northcutt**
Rampant convergence between mammals and birds in body and brain

3:45-4:05 **Daniel Hoops, Marta Vidal-García, Jeremy F.P. Ullmann, Andrew L. Janke, Timothy Stait-Gardner, David A. Duchêne, William S. Price, John Endler, Martin J. Whiting and J. Scott Keogh**
Many selective pressures influence brain structure simultaneously but distinctively: An examination of patterns and processes in lizards

4:05-4:20 **Break** (15 minutes)

4:20-4:30 **Carneiro Award Presentation**
Karger Award Presentation

4:35-4:55 **DataBlitz**
Erin Maher, Hanako Hagio, Mary Harvey, Blake McClure, Alicia Hobbs
Lauren Williams, Dawei Han, Annaleigh York

4:55-5:00 **Jack Johnson memorial**

5:00-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

30th Karger Workshop in Evolutionary Neuroscience:
"The Role of Species Diversity in Neuroscience"
Thursday, November 1, 2018

7:30-8:40 Breakfast

8:40-8:50 Welcome and Introduction (Striedter, Preuss)

8:50-10:10 Session I (two talks followed by 30 min of discussion)
G. Striedter: Assumptions, assumptions: their role in model species research
J. Bolker: Selection of models: evolution and the choice of species for translational research

10:10-10:40 Coffee Break

10:40-12:00 Session II (two talks followed by 30 min of discussion)
M. Hale: The role of strategic tool and technique development in expanding access to diverse species in neuroscience
S. Juntti: The cichlid fish family as a system for connecting genetics to behavioral phenotypes

12:00-1:30 Lunch

1:30-2:30 Special Invited Lecture
P. Rakic: Evolution of neocortical expansion

2:30-3:50 Session III (two talks followed by 30 min of discussion)
T. Preuss: The marmoset: emergence of a new model primate
C. Logan: Commercialized rodent 'models': origins, marketing, and transfer

3:50-4:20 Coffee Break

4:20-5:40 Session IV (two talks followed by 30 min of discussion)
B. Finlay: The safety of numbers and the lonesome mouse: databases versus deep dives
S. Mysore: Stimulus selection: towards understanding underlying circuits in owls and mice

5:40-6:00 Panel Discussion

6:00-7:00 Reception

2018 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
November 2, 2018
Horton Grand Hotel, San Diego

7:30-8:15 **Breakfast**

8:15-8:30 **Introduction/Welcome**, Program Committee

8:30-8:45 **Andrew C. Halley and Terrence W. Deacon**
Comparative aspects of embryonic brain growth in mammals

8:45-9:00 **Katherine L. Bryant and Rogier B. Mars**
Evidence for evolutionary modifications to major white matter tracts in the hominoid lineage

9:00-9:15 **Bruno Mota**
The hidden invariants of mammalian cortical morphology

9:15-9:30 **Robert K. Naumann**
Comparative notes on the cellular architecture of the mammalian insular cortex and claustrum

9:30-9:45 **Christopher P. Heesy and Margaret I. Hall**
Digit reduction and limb loss is correlated with decreases in relative cerebellum volume in squamates

9:45-10:00 **Haley D. O'Brien**
Parallel evolution of artiodactyl selective brain cooling

10:00-10:15 **Break** (15 Minutes)

10:15-10:30 **Shyam Srinivasan, Kristina Poston, Megan Ly and Charles F. Stevens**
Organizational Principles of Distributed Circuits

10:30-10:45 **Mary Baldwin and Leah Krubitzer**
Evolution of cortical fields associated with movements of the body

10:45-11:00 **Kelsey Flowers, Jeremy Corfield and Andrew Iwaniuk**
Comparative study of anatomical adaptations associated with feeding ecology in waterfowl

11:00-11:15 **Brad Moffitt, Hunter Lawrence, Brooke Skinner, Samuel R. Atcherson and Jeffrey Padberg**
Functional organization of the auditory system in the nine-banded armadillo (*Dasypus novemcinctus)*

11:15-11:30 **Kushal Kolar and Marios Chatzigeorgiou**
Peculiar multi-modal sensory cells in a vertebrate sister group

11:30-11:45 **Malcolm A. MacIver and Ugurcan Mugan**
The change in sensory ecology during the vertebrate water-to-land transition provided a selective advantage for the evolution of planning systems

11:45-12:00 **Kenneth C. Catania**
How not to be turned into a zombie

12:00-1:30 **Lunch Break**

1:30-1:45 **Kimberley V. Sukhum, Jerry Shen and Bruce A. Carlson***
Evolution of active electrosensing is associated with extreme enlargement of the cerebellum in weakly electric African fishes

1:45-2:00 **Daphne Soares, Nicole Andanar, Manu Madhav, Ravikrishnan Jayakumar, Noah Cowan, Maria E. Bichuette and Eric S. Fortune**
Differences in electrosocial behavior in troglobitic and epigean *Eigenmannia*

2:00-2:15 **Allen F. Mensinger, Jacey Van Wert and Loranzie Rogers**
Lateral line activity during self-generated movement in free swimming toadfish*, Opsanus tau*

2:15-2:30 **Daniel Hoops, Robert F. Kyne, Alina He, Kelcie C. Schatz, LiPing Lin, Cecilia Flores and Matthew J. Paul**
What determines the timing of adolescence? Insights from model and non-model organisms

2:30-2:45 **Kathleen S. Lynch, Lauren A. O'Connell, Christopher N. Balakrishnan, Matthew I. M. Louder and Eva K. Fischer**
Losing maternal behavior: Understanding the neural and molecular basis of avian brood parasitism

2:45-3:00 **Joel A. Tripp**
Galanin is a conserved regulator of vertebrate reproductive and social behavior

3:00-3:15 **Julie M. Butler and Karen P. Maruska**
Reproductive state and behavioral context regulate expression and activation of *tachykinin3a* cells in the brain of a social African cichlid fish *Astatotilapia burtoni*

3:15-3:35 **Break (20min)**

3:35-4:10 **Karger Special Invited Guest: Pasko Rakic**
Ascent of Humans: Developmental Origin of Cortical Diversity During Evolution

4:10-4:35 **Carneiro Award Presentation** and **Karger Award Presentation**

4:35-5:00 **DataBlitz:** Emily Peele, Brooke Skinner, Cristian Gutierrez-Ibanez, Sarah Miller, Lauren Glassburn, Kazuya Fukuda and Bibikov Grigorievich

5:00-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

31st Annual Karger Workshop in Evolutionary Neurosceince
October 17, 2019
University Center, Chicago IL

Evolution of natural and drug-sensitive reward in addiction
Organized by Robert Huber, Bowling Green State University

7:30- 8:15 **Breakfast**

8:15-8:30 **Introduction - The Deep Phylogenetic Roots of Addiction**
Moira van Staaden, Bowling Green State University

8:30-9:20 **Craving, not Chemistry: The Human Face of Addiction**
Marc Lewis, Radboud University

9:20-10:10 **Tackling the Complexity of Genetics for Opioids Addiction in Human and Model Organism Populations**
Daniel A Jacobson, Oak Ridge National Laboratory

10:10-10:20 **Coffee Break**

10:20-11:10 **Illusions, Delusions and your Backward, Bayesian Brain**
Richard T Born, Harvard Medical School

11:10-12:00 **The streetlight effect: Implications for understanding the mechanisms underlying addiction**
F. Scott Hall, University of Toledo

12:00-12:30 **Panel Discussion**

12:30-2:00 **Lunch break**

2:00-2:50 **Scaling up: zebrafish models of opioid self-administration**
Randall T Peterson, University of Utah

2:50-3:40 **The Neuronal Circuitry of Foraging in the Predatory Sea-Slug Pleurobranchaea, and the Origin of Addiction**
Rhanor Gillette, University of Illinois

3:40-3:50 **Coffee Break**

3:50-4:40 **How Alcohol Influences Memory Circuits to Induce Cravings**
Karla Kaun, Brown University

4:40-5:30 **Long-term effects and transgenerational inheritance of amphetamine exposure in C. elegans**
Lucia Carvelli, Florida Atlantic University

5:30-6:00 **Panel Discussion**

6:00-7:00 **Reception**

2019 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting
October 18, 2019
University Center, Chicago IL

7:30-8:15 **Breakfast**

8:15-8:20 **Introduction/Welcome**, Program Committee

8:20-8:38 **Charvet CJ, Hendy JP**
Supragranular-enriched genes linked to protracted human frontal cortex development

8:38-8:56 **Falcone C, Wolf-Ochoa M, Amina S, Hong T, Vakilzadeh G, Hopkins WD, Patrick Hof, Sherwood CC, Manger PR, Noctor SC, Martínez-Cerdeñoa C**
Development of cortical interlaminar astrocytes across evolution

8:56-9:14 **Wiggenhauser, NG, Borries, C, Smaers J**
Reevaluating the evolution of cortical folding in mammals

9:14-9:32 **Halley AC, Baldwin MKL, Englund M, Sanchez A, Krubitzer**
The evolution of motor and somatosensory cortex in mammals: New insights from intracortical microstimulation in the short-tailed opossum (*Monodelphis domestica*)

9:32-9:50 **Mota B, Herculano-Houzel S, York A, Muricy A**
Understand the origins of cerebellar gyrification: A comparative approach

9:50-10:08 **Mathew V, Smaers JB**
Differential expansion of cerebellar lobules in primate evolution contextualizes the contribution of the cerebellar system to human cognition.

10:08-10:28 **Break**

10:28-10:46 **Laforest K, Peele EE, Yopak KE**
Older and wiser? Ontogenetic shifts in brain size and brain organization in the Atlantic sharpnose shark, *Rhizoprionodon terraevovae*

10:46-11:04 **Braun CB**
Negotiations and love songs: Jamming interactions in pulse gymnotiforms are a flexible system of interactions and conspecific assessments

11:04-11:22 **Ikenaga T, Tsuji M, Nakamura T, Tajiri T, Kiyohara S**
Diversity of serotonergic cells in the taste bud of fish

11:22-11:40 **Iwaniuk AN, Keirnan A, Janetzki H, Mardon K, Murphy SA, Leseberg NP, Weisbecker V**
The endocast of Australia's most elusive bird: The night parrot

11:40-11:50 Special Presentation in Honor of Jack Pettigrew (S. Collin)

12:00-1:30 **Lunch Break**

1:30-1:48 **Gaede AH, Smyth G, Altshuler DL, Wylie DR**
Differences in the visual response properties of optic flow neurons in species with distinct flight behaviors

1:48-2:06 **Powers AS, Walsh AP**
New insights into the function of the dorsal and medial cortex in turtles

2:06-2:24 **Morhardt AC, Campbell C, Bhalla S, Steinkruger M, Mellnick V, Thomas B**
Endocranial anatomy and ontogeny of the extinct dinosaur genus Triceratops using 3D visualization

2:24-2:42 **Watanabe A, Gignac PM, Balanoff AM, Green TL, Kley NJ, Norell M**
Are endocasts good proxies for brain size and shape in archosaurs throughout ontogeny?

2:42-3:00 **Dawley EM, Ammons D, Voyack A, Dykie A, Palazzolo C**
Is spinal cord regeneration an adaptation in amphibians?

3:00-3:18 **Gillette R, Gribkova E**
The neuronal circuitry of foraging in the predatory sea-slug *Pleurobranchaea* and the origin of addiction

3:18-3:38 **Break**

3:38-4:38 **Karger Special Invited Guest: Marc Lewis**
Mapping the chemistry of attraction from animal models to human addiction

4:38-4:50 **Carneiro Award Presentation** and **Karger Award Presentation**

4:50-5:05 **DataBlitz:** Adalee Lube, Carlay LaTour, Daniel Hoops

5:05-6:00 **Business Meeting**

6:00-9:00 **Reception and Silent Auction**

Speaker is underlined

32nd Karger Workshop in Evolutionary Neuroscience

"Heterochrony in Comparative Neurodevelopment"

October 22, 2020
Virtual Conference
Organized by Andrew Halley

10:00 - 10:10am	**Introduction**	
All times listed in Eastern Time (ET)	**Session 1**	**Heterochrony in Brain Structure**
10:10 - 10:40am	Barbara Finlay Cornell University	*Homochrony permits heterogeneity: Nonlinear features of conserved timing allow multiple differentiation paths for large brains*
10:40 - 11:10am	Fernando Garcia-Moreno Basque Center for Neuroscience	*Time in neurogenesis: Conservation as the main trend in amniote brains*
11:10 - 11:30am	Panel Discussion, Q&A	L. Fenlon, A. Halley
11:30 - 12:00pm	**Coffee Break**	
	Special Invited Lecture	
12:00 - 1:00pm	Luis Puelles University of Murcia	*Neuromeric heterochrony in early neurogenesis: Comparison of chick and rat*
1:00 - 2:30pm	**Lunch Break**	
	Session 2	**Heterochrony Across the Body**
2:30 - 3:00pm	Karen Sears UCLA	*Heterochrony and the evolution of mammalian form*
3:00 - 3:30pm	Andrew C. Halley UC Davis	*Conservation and divergence in the relative timing of mammalian brain and body embryonic development*
3:30 - 3:50pm	Panel Discussion, Q&A	B. Finlay, L. Krubitzer
3:50 - 4:20pm	**Coffee Break**	
	Session 3	**Heterochrony in Brain Function & Connectivity**
4:20 - 4:50pm	Leah Krubitzer UC Davis	*Variability in cortical organization and connectivity in mammals: Where, when, and for how long?*
4:50 - 5:20pm	Laura Fenlon University of Queensland	*Transcriptional heterochronies underlie divergent cortical projection routes in mammalian brain evolution*
5:20 - 5:40pm	Panel Discussion, Q&A	K. Sears, F. Garcia-Moreno
5:40 - 6:10pm	**Final Discussion**	

2020 J.B. Johnston Club for Evolutionary Neuroscience Annual Meeting

Friday, October 23, 2020
(Times are EDT)

8:15-8:30 **Introduction/Welcome**, Program Committee

8:30-8:45 **Neuronal plasticity in large-brained mammals: Adult neurogenesis or "immature" neurons?**
Luca Bonfanti, Chet C. Sherwood and Chiara La Rosa

8:45-9:00 **Sequence heterochrony in insect brain development leads to an immature form of the central complex: a fly-beetle insight**
Max S. Farnworth and Gregor Bucher

9:00-9:15 **Does the evolution of food-hoarding involve the modification of the appetite-regulation system?**
Tom V. Smulders, Lindsay J. Henderson, Bedour Alsayegh and Tim Boswell

9:15-9:30 **Break**

9:30-9:45 **Evolutionary trajectory of the primate neocortical expansion**
Katja Heuer and Roberto Toro

9:45-10:00 **Cutting across structural and transcriptomic scales translates time across the lifespan and maps frontal cortex circuitry development in humans and chimpanzees**
Christine J. Charvet

10:00-10:15 **Cortical interlaminar astrocytes are generated prenatally, mature postnatally, and express unique markers in human and non-human primates**
Carmen Falcone, Elisa E. Penna, Tiffany Hong, Alice F. Tarantal, Patrick R. Hof, William D. Hopkins, Chet C. Sherwood, Stephen C. Noctor and Veronica Martínez-Cerdeño

10:15-10:30 **Evolutionary and homeostatic changes in morphology of visual dendrites of Mauthner cells in Astyanax**
Zainab Tanvir, Daihana Rivera, Kristen E. Severi, Gal Haspel and Daphne Soares

10:30-11:00 **Break**

11:00-11:15 **Evolution of visual pathways in teleosts and topographic organization of the tectal projections to the nucleus prethalamicus**
Hanako Hagio and Naoyuki Yamamoto

11:15-11:30 **Organization of telencephalic- "ponto"-cerebellar pathways in birds.**
Cristián Gutiérrez-Ibáñez, Maximo Fernandez, Madison Pilon, Gonzalo Marin and Douglas R. Wylie

11:30-11:45 **Variation in Oculomotor Nuclei Size Reflects Behavior in Birds**
Felipe Cunha, Cristián Gutiérrez-Ibáñez, Douglas R. Wylie
and Andrew N. Iwaniuk.

11:45-12:00 **The marsupial visual system gives new insights into the evolution of parallel visual pathways in mammal: A comparative study**
Alfonso Deichler, Macarena Ruiz-Flores, Tomas Vega-Zuniga, Daniel Severín, Gonzalo Marín and Jorge Mpodozis.

12:00-12:15 **Break**

12:15 -12:30 **Magnification of the tongue for echolocation in movement maps of the Egyptian fruit bat**
Andrew C. Halley, Michael Yartsev, and Leah Krubitzer

12:30-12:45 **Artificial gene networks and high throughput analysis of in-situ hybridization data reveal the impact of experience and species on cortical Id2 and RZRb expression during development.**
Mackenzie Englund, Sebastian James, Riley Bottom, Kelly Huffman, Stuart Wilson and Leah Krubitzer

12:45-1:00 **Convergent mosaic enlargement of brain regions related to the evolution of novel electrosensory systems**
Erika L. Schumacher and Bruce A. Carlson

1:00-1:15 **The Zombie Plot Thickens—A Tale of New Stings from the Jewel Wasp's Crypt**
Kenneth C. Catania

1:15-2:45 **Lunch**

2:45-3:00 **Pallial Eversion Demystified: Lhx5- and vGlut2a-driven GFP-Expressions in Zebrafish Identify the Thalamic Eminences as the Missing Links between the Teleostean and Mammalian Prosomeric Amygdala Ground Plan**
Thomas Mueller

3:00-3:15 **Corollary discharge evolution in mormyrid electric fish**
Matasaburo Fukutomi and Bruce A. Carlson

3:15-3:30 **Variation in auditory sensitivity of salamanders reflects ecomorphological diversity of the inner ear**
Grace Capshaw, Daphne Soares, Jakob Christensen-Dalsgaard, and Catherine E.Carr

3:30-3:45 **From complex to simple: Evolution of the amniote thalamic reticular nucleus**
Michael B. Pritz

3:45-4:00 **Break**

4:00-4:30 **DataBlitz:** Nicole Barger, Adalee Lube, Norma Pena-Flores and Laurel Yohe

4:30-4:45 **Break**

4:45-5:45 **Business Meeting**

JBJC Spring Virtual Symposium - Peace through herpetofauna

J.B. Johnston Club for Evolutionary Neuroscience Spring Virtual Symposium

Friday, April 2, 2021

Schedule (Times are EDT)

Session 1: Undergraduates and graduate students that worked with Walt Wilczynski

10:00 – 10:10am **Introduction & Welcome,** Kathleen Lynch & Blinda McClelland

10:10-10:40am **The Neuroecology of Alternative Reproductive Tactics: Interactions Between Spatial Cognition and Monogamy**

Alex Ophir (Cornell University)

10:40-11:10am **Sickness and the social brain: microglia, microbes, and neural development**

Staci Bilbo (Duke University)

11:10-11:40am **The hunger artist: Intero- and exteroceptive cues shape vocal effort in the singing mouse**

Steve Phelps (University of Texas at Austin)

11:40-12:10pm **Frognition: Poison Frogs and the Ecology of Spatial Memory**

Sabrina Burmeister - (University of North Carolina Chapel Hill)

12:10- 12:30pm **Panel Discussion, Q & A**

12:30-1:30pm Lunch Break & Hearing Memories from Friends and Colleagues of Walt Wilczynski

-12:30-12:40pm Elliot Albers - Center for Behavioral Neuroscience (Georgia State University)

-12:40-12:50pm Andy Bass - (Cornell University)

-12:50-1:00pm Laura Carruth - (Georgia State University)

Session 2: Postdoctoral fellows that worked with Walt Wilczynski

2:30 – 3:00pm Context-dependent effects of T-pulses on vocal and spatial behavior

Cathy Marler - (University of Wisconsin)

3:00-3:30pm Frequency-specific auditory directional sensitivity of Northern saw-whet owls

Megan Gall (Vassar College)

3:30-3:50pm Panel Discussion, Q & A

3:50-4:20pm Coffee Break & Hearing Memories from Friends and Colleagues of Walt Wilczynski

-3:50-4:00pm Joann Chu - The Bridge between Austin and Atlanta

4:20-4:50pm Neurobiology of seasonal life-history transitions

Deborah Lutterschmidt (University of California, Irvine)

4:50-5:20pm Perceptual biases and the mismatch between auditory sensitivity and call frequency Kim Hoke (Colorado State University)

5:20-5:40pm Froggy can you hear me: evolutionary and allometric insights into auditory sensitivity and morphology

Mike Ryan (University of Texas at Austin)

5:40-6:00pm **Panel Discussion, Q & A**

6:00-7:00pm **Open Social - Beer and Wine Available in your own fridge**

Debbi Greene will start off the social

33rd KARGER WORKSHOP IN EVOLUTIONARY NEUROSCIENCE

Title: Conservation, divergence and convergence in amygdala evolution

Honoring *Prof. Luis Puelles, University of Murcia, Spain*
In memorian of *Dr. Laura L. Bruce, Creighton University, Omaha, Nebraska, USA*
Organizers: Loreta Medina and Ester Desfilis, University of Lleida and Lleida's Institute of Biomedical Research-Dr. Pifarré Foundation (IRBLleida), Spain

Schedule (US Central Standard Time-Chicago): All virtual, via Accelevents

8:45h Opening (Loreta Medina and Ester Desfilis).

9:00h (Thomas Mueller, Kansas State University, KS, USA;
Despite Morphological Divergences–Molecular Studies in Zebrafish Reveal Strikingly Conserved Missing Links between Amygdalae of Ray-Finned Fish and Mammals

9:30h Nerea Moreno, Universidad Complutense de Madrid, Spain;
Evolutionary analysis of the pallial region of anurans, including the pallial amygdala

10:00h Maria Antonietta Tosches, Columbia University, NY, USA;
Evolution of the pallial amygdala: a cell type perspective

10:30h. Break

11:00h Helen Barbas, Boston University, MA, USA;
Relationship of cortex with amygdala in primates: all roads lead to development and evolution

11:30h Loreta Medina and Ester Desfilis, University of Lleida and Lleida's Institute of Biomedical Research-Dr. Pifarré Foundation (IRBLleida), Spain;

Evolution and development of amygdala subdivisions: pallial, subpallial and beyond

12:00h. Lunch

14:00h Prof. Luis Puelles, University of Murcia, Spain;
Evolution of the amygdala

14:30h Mario F. Wullimann, Ludwig-Maximilians-Universität Munich, Germany;
Neural pathways of olfactory kin imprinting and kin recognition in zebrafish

15:00h Bradley Colquitt, University of California at San Francisco, CA, USA;
Cellular evolution of birdsong control circuits

15:30h Lauren A. O'Connell, Stanford University, CA, USA;
Amygdala control of social behavior in anamniotes

16:00h Concluding remarks and closing (Loreta Medina and Ester Desfilis).

Summary
The amygdala is a complex brain structure that is critical for regulating emotions, social behavior and cognition in mammals, but whose identification in non-mammalian species and across evolution has been highly controversial. In this workshop, across-species aspects of amygdala expression will be covered from various viewpoints, considering distinct developmental and evolutionary mechanisms involved in conservation, divergence and convergence. This Workshop is also held **in honor to Prof.**

Luis Puelles, an internationally highly recognized researcher, who officially retired a year ago, but continues to publish at the highest levels of excellence on forebrain development and evolution, His latest publications challenge some of the earlier views on amygdala organization, function and evolution. The Workshop also commemorates **Dr. Laura L. Bruce,** who greatly contributed to telencephalic evolution by challenging the predominant view on cortex versus amygdala in the brain of non-mammals.

2021 Annual Meeting of the J.B. Johnston Club for Evolutionary Neuroscience
November 12, 2021

7:30-8:30 **Breakfast**

8:30-8:45 **Introduction/Welcome,** Program Committee

8:45-9:00 **Akinobu Watanabe, Mariel Bedell, Scott Landman, Sylvia S. Marshall, Yekaterina Okouneva, and Paul M. Gignac**
Polish crested chickens: a new comparative model for studying the evolution of aberrant brains and skulls

9:00-9:15 **Kelsey J. Racicot, Jackson R. Ham, C. Popic , Rie Henriksen, Dominic Wright, and Andrew N. Iwaniuk**
Chickens have smaller visual and limbic brain regions than junglefowl: effects of domestication on the brain

9:15-9:30 **Cristian Gutiérrez-Ibáñez, Clara Amaral, Douglas R. Wylie, and Jerome Baron**
The evolution of skilled hindlimb movements in birds

9:30-9:45 **Loranzie S. Rogers and, Joseph A. Sisneros**
Seasonal plasticity of utricular hair cell auditory sensitivity in the plainfin midshipman

9:45-10:00 **Amalia J. Napoli, Josiah D. Zoodsma, Bismi Biju, Olgerta Mucollari, Sarah Schubel, Aaliya Sayed, Lonnie P. Wollmuth, and Howard I. Sirotkin**
NMDA receptor activity differentially affects zebrafish neural stem cells

10:00-10:15 **Break**

10:15-10:30 **Darcy B. Kelley, Young Mi Kwon, Elizabeth G. Bagnato-Conlin, Emilie Perez, Avelyne Villain, Christa Baker, Mala Murthy, andAndres Bendesky**
Uncovering genetic architectures of neural circuits for an innate behavior: Xenopus vocal communication

10:30-10:45 **David Vanier, Jeroen Smaers, and Paul Manger**
The macroevolution of a substrate for representational memory in mammals

10:45-11:00 **Luiz Pessoa, Loreta Medina, and Ester Desfilis**
Mental categories and the vertebrate brain: The neural basis of behavior

11:00-11:15 **Ross S. DeAngelis, Marisa Ballard, and Hans A. Hofmann**
Pair bonding and parental care: how does an evolutionarily conserved social decision-making network integrate conflicting social stimuli to generate context-appropriate behavior?

11:15-11:30 **Max S. Farnworth, and S.H. Montgomery**
Trade-offs are not a mechanism for sensory organ and brain evolution

11:30:11:45 **Shyam Srinivasan, and Saket Navlakha**
Conserved stochastic algorithms for learning and discrimination

11:45-13:15 **Lunch**

13:15-13:30 **Pierre Estienne, Jean-Michel Hermel, and Kei Yamamoto**
Encephalization in teleost fishes: yet another way of allowing complex behaviors?

13:30-13:45 **Daniel Hoops, Jason Lerch, and John Sled**
Parceling out the brain: allometry and encephalization deconstructed

13:45-14:00 **Laurel R. Yohe, Matteo Fabbri, and Bhart-Anjan Bhullar**
Paleoneurobiology of the tetrapod olfactory bulb inferred from extant olfactory receptor repertoires

14:00-14:15 **Kei Yamamoto**
Re-interpretation of pallial regionalization in vertebrates

14:15-14:30 **Jiawei "Will" Han, and Hans A. Hofmann**
Evolutionary transcriptomics of the subpallial amygdala across twelve species of vertebrates

14:30-14:45 **Wensheng Liu, and Jeroen B. Smaers**
Significant cerebellar reorganization at the marsupial-placental dichotomy

14:45:15:00 **Carmen Falcone, Erin L. McBride, Patrick R. Hof, William D. Hopkins, Paul R. Manger, Chet C. Sherwood, Stephen C. Noctor, and Verónica Martínez-Cerdeño**
Redefining varicose projection astrocytes in primates

15:00-15:15 **Break**

15:15-15:30 **K. Heuer, N. Traut, S.N. Pashaki, R. Mylapalli, F. Alavi, and R. Toro**
Phylogenetic and neuroanatomical determinants of primate behavior

15:30-15:45 **Andrew C Halley, Michael Yartsev, and Leah Krubitzer**
Tip of the tongue: the evolution of motor cortex for lingual echolocation in the Egyptian fruit bat (Rousettus aegyptiacus)

15:45-16:00 **James C. Dooley, G. Sokoloff, and M. S. Blumberg**
Coordinated activity in primary motor cortex and the red nucleus first emerges during REM sleep-associated theta oscillations in preweanling rats

16:00-16:15 **Kwadwo Ofori, and C. J. Charvet**
Structural and transcriptomic data reveals very old age as a distinct feature in humans relative to great apes

16:15-16:30 **Werner M. Graf**
Visual and vestibular guided control of posture, movement and self-motion perception across species

16:30-16:45 **Georg F. Striedter**
Comparative biomedicine: the devil lurks in the details

16:45-17:00 **Break**

17:00-17:10 **Karger Award:** Grace Capshaw

17:10-17:20 **Mark Bradford:** In Memory of Laura Bruce

17:20-18:00 **Business Meeting**

18:00-21:00 **Reception**