

Annual Scientific Retreat 2024



Wednesday, September 25 - Friday, September 27

Holiday Inn Resort Lumina

1706 N Lumina Ave

Wrightsville Beach, NC 28480

Invited Keynote Speakers



Ulrich Mueller

Principal Investigator
Bloomberg Distinguished Professor
Johns Hopkins University School of
Medicine
Department of Neuroscience

Cynthia Hsu

Assistant Professor

Fresno State University
Department of Biology



Schedule of Events

Wednesday, September 25, 2024	
12:30 pm – 1:00 pm	Conference Check-In
1:15 pm – 1:20 pm	Introduction Steve Lisberger
1:20 pm-1:30 pm	Update on Equity, Diversity, and Inclusion Anita Disney
1:30 pm-1:40 pm	Update on Postdoctoral Organization for Neuroscientists Tom Harmon
	Talk Session I, Moderator: Rebecca Yang
1:40 pm – 2:00 pm	M. Maya Kaelberer "A Gut Sense"
2:05 pm – 2:25 pm	Elana Lockshin "The Integrated Stress Response, a Perpetrator or Protector in Parkinson's Disease"
2:30 pm – 2:50 pm	Seok-Yong Lee "Sensing Cold: Molecular Mechanism of TRPM8 Gating"
2:55 pm – 3:15 pm	Karim Abdelaal "Brain Networks of Addiction"
3:15 pm – 3:30 pm	Short Break
3:30 pm – 4:00 pm	Icebreaker
4:10 pm – 5:10 pm	<i>Keynote I: Introduction by Jörg Grandl</i> Ulrich Mueller "The Sound of Silence: Mechanotransduction, Auditory Perception and the Molecular Pathogenesis of Hearing Loss"
5:15 pm – 7:30 pm	Poster Session I *Drinks and light Hors D'oeuvres*
Evening	Dinner on your own

Thursday, September 26, 2024	
7:30 am – 9:00 am	Breakfast Available Outside Ballroom
	Talk Session II, Moderator: Dmitry Velmeshev
9:00 am – 9:20 am	Nicole Scott-Hewitt "RNA-dependent Neuroimmune Interactions Impact Protein Homeostasis in the Aging Brain"

Thursday, September 26, 2024

9:25 am – 9:45 am	Aryana Yousefzadeh “Cholinergic Interneurons in the Nucleus Accumbens Mediate the Rewarding Properties of Opioid Drugs”
9:50 am – 10:10 am	Scott Smyre “Hi-Fi, Technicolor: Joint Modeling of Audio and Video Data”
10:15 am – 10:40 am	Short Break
	Talk Session III, Moderator: Josh Huang
10:40 am – 11:00 am	David Herzfeld “Cracking the Computations of the Cerebellar Circuit”
11:05 am – 11:25 am	Justin Savage “How does Neuronal Contact Induce Astrocyte Transcriptional Maturation?”
11:30 am – 11:50 am	Court Hull “An Emerging Role for the Cerebellum in Reward-Based Learning”
12:00pm – 2:30 pm	Lunch/Free time
2:30 pm – 3:25 pm	<i>Keynote II: Introduction by Steve Lisberger</i> Cynthia Hsu “How to Stay in Academia but Keep Your Training Wheels, Too”
3:30 pm – 3:50 pm	Short Break
	Talk Session IV, Moderator: Eva Naumann
3:55 pm – 4:15 pm	Catherine Wang “Tracking the Emergence and Robustness of Persistent Activity in the Premotor Cortex across Learning”
4:20 pm – 4:40 pm	Leah Acker TBD
4:45 pm – 5:05 pm	Amanda Lewis “Piezo1 Ion Channels are Capable of Conformational Signaling”
5:15 pm – 7:30 pm	Poster Session II *Drinks and light Hors D'oeuvres*
7:30 pm – 9:30 pm	Dinner Banquet Awards for Best Student and Postdoc Talks Michael Mutersbaugh Award Student Skit
9:30 pm – 11:00 pm	Dance Party with DJ

Poster Session I: Wednesday, September 25, 2023, 5:15pm-7:30pm



Graduate Student



Postdoc



Lab Affiliate



Principal Investigator

Poster	Name/ Position		Lab	Title
1	Andrew Aldridge		West	<i>H1 and Done: Exploring the Impact of Frameshift Mutations in Linker Histone H1.4</i>
2	Emily Alway		Bohórquez	<i>Stomach Surgery Cuts Sugar Preference</i>
3	Shania Appadoo		Matsunami	<i>Unveiling the Sulfur Scent: The Impact of Copper Metabolism on Olfactory Dysfunction in Wilson's Disease</i>
4	Minel Arinel		Naumann	<i>Mapping Neural Responses to Gut-Mediated Signals in Larval Zebrafish</i>
5	Robin Blazing		Franks	<i>Respiration Coordinates the Olfactory Cortical Code</i>
6	Antony Brayan Campos Salazar		Bilbo	<i>Early Immune Activation Impacts Cytokine Production, Microglial Synaptic Pruning and Drives Behavioral Changes in a Sex-Specific Manner</i>
7	Alev Brigande		Disney	<i>A Species-Conserved Integrative Computation on Neuromodulation</i>
8	Zac Caffall		Calakos	<i>DIO-SPOTlight Transgenic Mouse Functionally Monitors the Integrated Stress Response Generates CNS-wide Atlas of Steady-state Activity in Cholinergic Neurons</i>
9	Celine Cammarata		Glickfeld	<i>Dissecting Cholinergic Modulation of Cortical Circuits in Context-Dependent Processing</i>
10	Rene Carter		Tadross	<i>Elevating Dopamine Release in the Mesolimbic Pathway During Extinction Learning</i>
11	Yang Chen		R. Yang	<i>Parallel use of Olfactory and Egocentric Cues for Non-Visual Cues-Driven Spatial Learning in Drosophila</i>
12	Maddie Clark		Bilbo	<i>Impact of Adolescent Social Isolation on Behavior and Microglia-Dopamine System Interactions During Development</i>
13	Mara Cowen		West	<i>Integrating Morphological and Functional Phenotypes with Differential Gene Expression in H1-4 Mutants using iNeurons</i>
14	Marie Cronin		Grandl	<i>Noncanonical Modulation of Piezo Mechanotransduction</i>
15	Mona Ghimire		Grandl	<i>Where's Piezo?: Investigating Piezo Localization in Neuro-2-A Cells</i>
16	Batoul Darwish		Donnelly	<i>Sting signaling protects against central nervous system invasion in animal models of Listeria monocytogenes</i>
17	Simon Daste		Franks	<i>Projection-Specific Encoding of Odorant Features by Olfactory Cortex Neurons</i>
18	Benjamin Devlin		Bilbo	<i>Neuronal Cytokine IL34 Influences Plaque Pathology, Microglia, and Behavior in a Mouse Model of Alzheimer's Disease</i>
19	Julia Dziabis		Bilbo	<i>Microglial Inflammatory Signaling Influences GABAergic Synapse Development in the Hippocampus</i>
20	Elise Edgar		Kay	<i>Screening Putative Astrocyte-Derived Molecular Cues that Guide Angiogenesis</i>
21	Alana Evora		Carreira Rosario	<i>Investigating Transitions between Signaling Modes during Embryonic Neural Activity</i>

Poster Session I: Wednesday, September 25, 2023, 5:15pm-7:30pm



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Postdoc



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Poster	Name/ Position		Lab	Title
22	Kayla Fernando		Hull	<i>Testing the Cellular Mechanisms that Underlie Cerebellar Synaptic Plasticity and Motor Learning</i>
23	Malak Fouani		Moore	<i>Deciphering the Role of TRPV4 in Mast-Cell Mediated Migraine Pathophysiology</i>
24	Kaitlyn Fouke		Naumann	<i>All-Optical Mapping of Multiregional Functional Connectivity Underlying Visuomotor Transformations</i>
25	Erin Fykes		West	<i>The Role of lncRNA BDNF-AS in Regulating BDNF Expression in Human Neuronal Development</i>
26	Veronica Galvin		Disney	<i>Investigating Effects of Nicotine Delivery across a Cortical Column in V1</i>
27	Sara Gannon		Glickfeld	<i>Investigating Pattern Motion Encoding in Mouse Visual Cortex</i>
28	Runbo Gao		Li	<i>A Cerebello-Thalamo-Cortical Pathway Supports Attractor Dynamics in Frontal Cortex</i>
29	Upasana Ghosh		Tadross	<i>Development of an Electropolymer that can Genetically Link Defined Neurons to Electrodes</i>
30	Ziyi Gong		Pearson	<i>Correctness is its Own Reward: Bootstrapping Error Codes via Local Circuits in Self-Guided Reinforcement Learning</i>
31	Tom Harmon		Mooney	<i>Feedback Dependent Control of Acoustic Features by Vocalizing</i>
32	Zichen Cleo He		Naumann	<i>Neural Circuits Underlying the Optomotor Responses in Larval Teleost Fish</i>
33	Marie Hemelt		Hull	<i>Cerebellar Circuit Processing during Reward Learning</i>
34	Mariana Holguin Lopez		Huang	<i>Exploring the Progenitor Basis of Glutamatergic Neuron Diversity in the Cerebral Cortex.</i>
35	Tingwei Hu		Glickfeld	<i>PV Interneurons Shape Primary Visual Cortex Activity in a Size-Dependent Manner</i>
36	Whit Jacobs		Naumann	<i>Variation in the Larval Zebrafish Optomotor Response</i>
37	Jae-Hyun Kim		Li	<i>Functional Cell-Types in Frontal Cortex Measured across Multiple Tasks</i>
38	Elizabeth Matthews		Southwell	<i>Exploring the Functional Circuit Properties of Human Caudal Ganglionic Eminence Interneurons</i>
39	Russell Ravenel		Tadross	<i>Unraveling Extrapyramidal Symptoms with a Cell Type-Specific Dopamine Antagonist</i>
40	Carlo Vignali		Calakos	<i>Neuromodulation in the Striatum during Striatal Dependent Behavior</i>
41	The Neurobiology EDI Committee			<i>An Analysis of the Institutions of Speakers Invited to the Neurobiology Seminar Program</i>

Poster Session II: Thursday, September 26, 2023, 5:15pm-7:30pm



Graduate Student



Postdoc



Lab Affiliate



Principal Investigator

Poster	Name/ Position		Lab	Title
1	Heet Kaku		Li	<i>Activity Maps of Orofacial Rhythms</i>
2	Ned Kan		R. Yang	<i>Investigating the Role of Dopamine in Value-Based Decision-Making in Drosophila</i>
3	Graciela Kiesling		Bohórquez	<i>The Life of a Neuropod Cell</i>
4	Tiffany Ko		Goldstein	<i>Bowman's Glands: More than just Mucus?</i>
5	Sushanth Kumar		Bilbo	<i>Maternal High-Fat Diet alters Microglia-Serotonin Neuron Interactions during Early Development</i>
6	Phoebe Lee		Silver	<i>The Role of Radial Glial Cell Basal Endfeet in Pial Niche Signaling during Cortical Development</i>
7	Lailah Ligons		Tadross	<i>ElectroGLuE: Genetically Encoded Electrophysiology</i>
8	Stephanie Lovich		Groh	<i>Neural and Anatomical Drivers of Eye Movement-Related Eardrum Oscillations</i>
9	Miles Martinez		Pearson	<i>Song Variability Coding in the Zebra Finch Basal Ganglia</i>
10	Yuleika Martinez Castillo		Evans	<i>Mitochondrial-Derived Vesicles as a Repair Mitochondrial Quality Control Mechanism in Health and Disease</i>
11	Karina Matos		Naumann	<i>Gustatory System in Zebrafish</i>
12	Mona Marie		Matsunami	<i>Decoding the molecular interactions of odorant receptors with odor mixtures</i>
13	Emmanuel Medrano		R. Yang	<i>Contextual Modulation of Egg-Laying Site Selection in Drosophila Melanogaster</i>
14	Audrey Mercer		Mooney	<i>Mechanisms of Dopamine-Dependent Learning in the Songbird</i>
15	S. Monroe		Bilbo	<i>Response to Respiratory Viral Infection is Modulated by Neuroendocrine Cells</i>
16	Federica Mosti		Silver	<i>Role of the Enhancer HAR1984 in Human Cortical Development and Evolution</i>
17	Dorsa Motevalli		R. Yang	<i>Neural Circuitry Subtracting Value from Choices during Decision-Making in Drosophila</i>
18	Thomas Nguyen		Disney	<i>Distribution of m1 and m2 Receptors on V2 Feedback Projections to V1</i>
19	Liz O'Gorman		Pearson	<i>Hacking song learning with deep learning: real-time perturbation of zebra finch song</i>

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Postdoc



Lab Affiliate



Principal Investigator

Poster	Name/ Position	Lab	Title
20	Ichie Ojiro 	Matsunami	<i>Investigating the Mechanism of Enantiomer Discrimination by Odorant Receptor</i>
21	Sevgi Ozturk 	Hull	<i>Cell-type Specific Neural Responses in a Cerebellar-dependent Motor Timing Task</i>
22	Caitlin Paisley 	Kay	<i>Cell-Surface Signals on Developing Astrocytes Promote their Elimination by Microglia</i>
23	Michael Patton 	Billbo	<i>Microglia Heterogeneity Promotes Region Specific Remodeling of Serotonin Circuits</i>
24	Jiaxuan Qi 	Mooney	<i>Dual Neuromodulatory Dynamics Underlie Birdsong Learning</i>
25	Daniel Quintero 	Eroglu	<i>Prenatal Exposure to Environmental Stressors alters Microglial Transcriptional Profile and Brain Networks in Adolescence</i>
26	Naama Reicher 	Bohórquez	<i>A Gut Sense for Medicine</i>
27	Marija Rudzite 	Sommer	<i>Identifying Visual Signals Projecting to the Superior Colliculus in Rodents and Primates</i>
28	Drew Schreiner 	Mooney	<i>A Synaptic Locus of Song Learning</i>
29	Zoe Shan 	H. Yang	<i>Targeting Lipid Asymmetry of Glial Cell Membranes to Modulate Ferroptosis</i>
30	William Sharp 	Grandl	<i>The Modification of Human Piezo2 Ion Conductivity through Alternative Splicing</i>
31	Michael Sindoni 	Grandl	<i>The Splice is Right: Modulation of Human Piezo2 Tension Sensitivity by Alternative Splicing</i>
32	Scott Smyre 	Pearson	<i>Multimodal Modeling Methods for Joint Analysis of Acoustic and Neural Features</i>
33	David St-Amand 	Pearson	<i>Do we need Space and Time to Understand Color Vision?</i>
34	Olivia Timmermans 	McHenry	<i>Illuminating the Impacts of Social Isolation on Hypothalamic Neurons and Intra-Group Behavioral Dynamics in Female Mice</i>
35	Owen Traubert 	Naumann	<i>Online Inference of Single-Cell Optimal Photostimulation Parameters</i>
36	Leslie Vazquez-Rangel 	Eroglu	<i>Elucidating the Role of Neurons on Astrocytic Mitochondrial Degradation</i>
37	Emily Weingardt 	Franks	<i>Breath Cycle Dynamics Modulate Cortical Odorant Decoding</i>
38	Lindsey Wilson 	Glickfeld	<i>Identifying Functional Connectivity Networks in Visual Cortex</i>
39	Huanghe Yang 	H. Yang	<i>Uncovering the Ionic Basis of an Atypical Inhibitory Mechanism in the Medial Habenula</i>
40	Jessica Zhang 	Huang	<i>Molecular Mechanisms underlying Direct versus Indirect Neurogenesis of Extratelencephalic Neurons</i>

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Poster	Name/ Position	Lab	Title
41	Yoonhee Ki 	Li	Analyses of Behavioral and Neuronal Responses during Decision-Making Reveal Deficits in Rett Syndrome Mice
42	Zijian Zhang 	Velmeshev	<i>Mapping Synaptic Networks with Controlled Rabies Virus</i>
43	Shirui Zheng 	Carreira Rosario	<i>Initiation of Patterned Spontaneous Activity during Development in the Drosophila Brain</i>

List of Attendees

<i>Karim Abdelaal</i>	<i>Erin Fykes</i>	<i>Josh Marek</i>	<i>Jillian Saunders</i>
<i>Leah Acker</i>	<i>Veronica Galvin</i>	<i>Mona Marie</i>	<i>Justin Savage</i>
<i>Jose Aguayo Guerrero</i>	<i>Sara Gannon</i>	<i>Miles Martinez</i>	<i>Drew Schreiner</i>
<i>Andrew Aldridge</i>	<i>Runbo Gao</i>	<i>Yuleika Martinez Castillo</i>	<i>Nicole Scott-Hewitt</i>
<i>Robert Alfredson</i>	<i>Mona Ghimire</i>	<i>Karina Matos</i>	<i>Olivia Shamberger</i>
<i>Trevor Alston</i>	<i>Upasana Ghosh</i>	<i>Hiro Matsunami</i>	<i>Ke Zoe Shan</i>
<i>Emily Alway</i>	<i>Lindsey Glickfeld</i>	<i>Elizabeth Matthews</i>	<i>William Sharp</i>
<i>Shania Appadoo</i>	<i>Ziyi Gong</i>	<i>Jenna McHenry</i>	<i>Brenda Shields</i>
<i>Minel Arinel</i>	<i>Jorg Grandl</i>	<i>James McNamara</i>	<i>Justine Shih</i>
<i>Diego Arroyo</i>	<i>Carissa Hansen</i>	<i>Emmanuel Medrano</i>	<i>Michael Sindoni</i>
<i>Sharena Ballard</i>	<i>Tom Harmon</i>	<i>Audrey Mercer</i>	<i>Chadbourne Smith</i>
<i>Keylin Banegas-Morales</i>	<i>Michael Harris</i>	<i>S. Monroe</i>	<i>Scott Smyre</i>
<i>Lilyanne Beaver</i>	<i>Zichen Cleo He</i>	<i>Yechan Moon</i>	<i>Derek Southwell</i>
<i>Staci Bilbo</i>	<i>Marie Hemelt</i>	<i>Kang Moon Sun</i>	<i>Sloan Soyster Heinz</i>
<i>Erika Blaine</i>	<i>David Herzfeld</i>	<i>Richard Mooney</i>	<i>David St-Amand</i>
<i>Lydia Blatnik</i>	<i>Mariana Holguin</i>	<i>Federica Mosti</i>	<i>Michael Tadross</i>
<i>Robin Blazing</i>	<i>Lopez</i>	<i>Dorsa Motevalli</i>	<i>Olivia Timmermans</i>
<i>Alev Brigande</i>	<i>Tingwei Hu</i>	<i>Han Mu</i>	<i>Marco Toc Sagra</i>
<i>Zachary Caffall</i>	<i>Josh Huang</i>	<i>Patrick Mulcahey</i>	<i>Owen Traubert</i>
<i>Nicole Calakos</i>	<i>Court Hull</i>	<i>Arthy Narayanan</i>	<i>Leslie Vazquez-Rangel</i>
<i>Celine Cammarata</i>	<i>Miles Jacob</i>	<i>Eva Naumann</i>	<i>Dmitry Velmeshev</i>
<i>Antony Brayan Campos</i>	<i>Whitney Jacobs</i>	<i>Thomas Nguyen</i>	<i>Carlo Vignali</i>
<i>Salazar</i>	<i>Juliette Jordan</i>	<i>Elizabeth/Liz O'Gorman</i>	<i>Jonathan Viventi</i>
<i>Amanda Carbajal</i>	<i>Maya Kaelberer</i>	<i>Ichie Ojiri</i>	<i>Pelin Volkan</i>
<i>Arnaldo Carreira Rosario</i>	<i>Heet Kaku</i>	<i>Seneca Oxendine</i>	<i>Catherine Wang</i>
<i>Rene Carter</i>	<i>Suyang Kan</i>	<i>Sevgi Ozturk</i>	<i>Emily Weingardt</i>
<i>Yang Chen</i>	<i>Katherine Kaplan</i>	<i>Caitlin Paisley</i>	<i>Anne West</i>
<i>Madeline Clark</i>	<i>Jeremy Kay</i>	<i>Annika Patterson</i>	<i>William C Wetsel</i>
<i>Kennedy Coates</i>	<i>Yoonhee Ki</i>	<i>Michael Patton</i>	<i>Autumn Wetsel</i>
<i>Mara Cowen</i>	<i>Graciela Kiesling</i>	<i>John Pearson</i>	<i>Lindsey Wilson</i>
<i>Marie Cronin</i>	<i>Jae-Hyun Kim</i>	<i>Daisy Perez</i>	<i>Jialin (Charlie) Wu</i>
<i>Batoul Darwish</i>	<i>Tiffany Ko</i>	<i>Sharon Powley</i>	<i>Hermione Xu</i>
<i>Simon Daste</i>	<i>Sushanth Kumar</i>	<i>Aja Pragana</i>	<i>Hai Dun Yan</i>
<i>Samantha Deasy</i>	<i>Ellisa Lang</i>	<i>Jiaxuan Qi</i>	<i>Huanghe Yang</i>
<i>Benjamin Devlin</i>	<i>Travis Larson</i>	<i>Lilyana Quigley</i>	<i>Rebecca Yang</i>
<i>Anita Disney</i>	<i>Tracy Lee</i>	<i>Daniel Quintero</i>	<i>Bonnie Zhiyi Yao</i>
<i>Julia Dziabis</i>	<i>Seok-Yong Lee</i>	<i>Nirvika Rastogi</i>	<i>Aryana Yousefzadeh</i>
<i>Elise Edgar</i>	<i>Phoebe Lee</i>	<i>J. Russell Ravenel</i>	<i>Qihang (Ben) Yuan</i>
<i>Cagla Eroglu</i>	<i>Agustin Letelier</i>	<i>Naama Reicher</i>	<i>Quanshan Zhang</i>
<i>Alana Evora</i>	<i>Amanda Lewis</i>	<i>Joseph Rittiner</i>	<i>Nora Zhang</i>
<i>Isabella Fallon</i>	<i>Nuo Li</i>	<i>Marija Rudzite</i>	<i>Zijian Zhang</i>
<i>Kayla Fernando</i>	<i>Lailah Ligons</i>	<i>Brayan Ruiz Lopez</i>	<i>Jessica Zhang</i>
<i>Mia Foglesong</i>	<i>Stephen Lisberger</i>	<i>Laura Rupprecht</i>	<i>Bingzhen Zhao</i>
<i>Malak Fouani</i>	<i>Cathy Liu</i>	<i>Jeffrey Russ</i>	<i>Shirui Zheng</i>
<i>Kaitlyn Fouke</i>	<i>Elana Lockshin</i>	<i>Fernando Santos Valencia</i>	<i>Meredith Stewart</i>