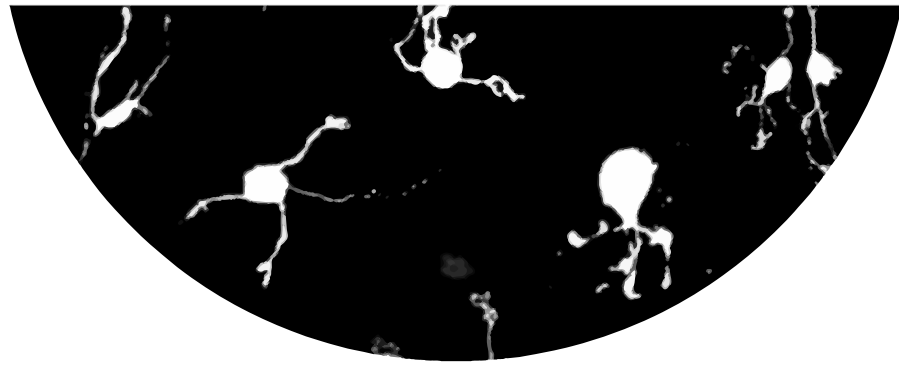


Duke | Neurobiology



Annual Retreat 2022

Wednesday, September 28 - Friday, September 30

Holiday Inn

1706 N Lumina Ave

Wrightsville Beach, NC 28480

Invited Keynote Speakers



Megan R. Carey

Champalimaud Center for the Unknown

Shai Silberberg

National Institutes of Health



Schedule of Events

Wednesday, September 28, 2022

11:30 am – 12:30 pm	Arrival
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 Diversity, Equity, and Inclusion Anita Disney
	<i>Talk Session I, Moderator: Jim McNamara</i>
1:30 pm – 1:50 pm	Tim Dunn <i>“Quantitative Profiling of Rodent Behavior during Social Interaction”</i>
1:55 pm – 2:15 pm	Robin Blazing <i>“Optogenetic Deconstruction of Temporal Codes for Olfaction”</i>
2:20 pm – 2:40 pm	Olu Lawal <i>“Uncovering the Role of Astrocyte-Secreted Thrombospondins in Goal-Directed Actions”</i>
2:45 pm – 3:05 pm	Martin Bohlen <i>“AAVs in the NHP - Towards the Development of Effective Neuronal Actuators in the Primate Model”</i>
3:05 pm – 3:30 pm	<i>Break</i>
3:30 pm – 4:00 pm	Anne West Ice Breaker: Getting to Know your Peers
4:10 pm – 5:10 pm	Keynote I <i>Introduction by Steve Lisberger</i> Megan Carey <i>“Understanding the Complex Behaviors of the 'Simple' Cerebellar Circuit”</i>
5:15 pm – 7:30 pm	Poster Session I
Evening	Dinner on your own

Thursday, September 29, 2022

7:30 am – 9:00 am	Breakfast Available Outside Ballroom
	<i>Talk Session II, Moderator: Lindsey Glickfeld</i>
9:00 am – 9:20 am	Steve Eliades <i>“In Search of an Error Signal: The Neurobiology of Marmoset Vocal Communication”</i>
9:25 am – 9:45 am	Jeremy Kay <i>“How to Build a Neural Circuit: Lessons from the Retina”</i>
9:50 am – 10:10 am	Miranda Scalabrino <i>“Three Blind Mice, See How They Regain Visual Function Following Therapy”</i>
10:15 am – 10:40 am	<i>Break</i>
	<i>Talk Session III, Moderator: Rebecca Yang</i>
10:40 am – 11:00 am	Chantell Evans <i>“Investigating Mitochondrial Quality Control Dynamics in Homeostasis and Disease”</i>
11:05 am – 11:25 am	Claire de March <i>“Structural Elucidation of Mammalian Odorant Receptors”</i>
11:30 am – 11:50 am	Juan Ramirez <i>“Novel Role for Synptogenic Molecule Hevin/SPARCL1 in Astrocyte to Microglia Communication”</i>
12:00pm – 2:30 pm	<i>Lunch/Free time</i>
2:30 pm – 3:25 pm	Keynote II Introduction by Jorg Grandl Shai Silberberg National Institutes of Health <i>“Assuring a Bright Future for Biomedical Research”</i>
	<i>Talk Session IV, Moderator: Jorg Grandl</i>
3:30 pm – 3:50 pm	Dmitry Velmeshev <i>“Cell Type and Lineage-Specific Analysis of Human Brain Development and Neurodevelopmental Disorders”</i>
3:55 pm – 4:15 pm	Victoria Hall <i>“Striatal Fast-Spiking Interneuron Plasticity in Habit Formation”</i>
4:20 pm – 4:40 pm	Jiaxuan Qi <i>“The Role of Dopamine and Its Target Song Basal Ganglia in Vocal Learning”</i>

4:45 pm – 5:05 pm	Jennifer Li <i>“Synaptic Depression of Intracortical Synapses Shapes Temporal Integration in Mouse Primary Visual Cortex”</i>
5:15 pm – 7:30 pm	Poster Session
7:30 pm – 9:30 pm	Dinner Banquet Awards for Best Student and Postdoc Talks Michael Mutersbaugh Award
9:30 pm – 11:00 pm	Marie Cronin and Anne West Team Trivia

Poster Session I

Wednesday, September 28, 2022, 5:15pm-7:30pm



Graduate Student



Postdoc



Lab Affiliate



Principal Investigator

	Name		Lab	Title
1	Samuel Strader		Andrew West	"Nanoplastics Catalyze Pathological Protein Aggregation"
2	Yuleika Martinez Castillo		Evans	"TOMM20/PDH-Positive Mitochondrial-Derived Vesicle Biogenesis is Altered by the Severity of Mitochondrial Damage"
3	Shuyang Jin		Hull	"Cerebellar Climbing Fiber Activity Driven by Unexpected Reward Influences both Neural and Behavioral Learning"
4	Aghil Abed Zadeh		Brunel	"Paradoxical effects of GABA in Striatum"
5	Drew Schreiner		Mooney	"Expression of Recent Learning Requires Basal Ganglia Activity during Juvenile Song Copying"
6	Miles Martinez		Pearson	"Data-Driven Exploration of Natural Song Learning in the Juvenile Zebra Finch"
7	Celine Cammarata		Glickfeld	"The Role of Excitatory Inputs to Somatostatin Interneurons in Context-Dependence of Stimulus Responses of Primary Visual Cortex"
8	Dhananjay Huilgo		Huang	"Orderly Production and Deployment of Cortical Projection Neuron Types through Intermediate Progenitors"
9	Max Nikitchenko		Naumann	"Open Source Frameworks for Development and Building of Laser Microscopes. Software and Hardware."
10	Audrey Mercer		Mooney	"The Effects of Dopamine and Tutoring on the HVC Microcircuit"
11	Sara Gannon		Glickfeld	"A Spatially Invariant Representation of Motion arises via Feedforward Projections in the Mouse Visual Cortex"
12	Emily Alway		Bohórquez	"Rapid Sugar Sensing from Gut to Brain"
13	Vijyendra Ramesh		Anne West	"Bidirectional Post-Mitotic Reprogramming of H3K27me3 underlies Neuronal Maturation and Plasticity in the Cerebellum"
14	Kristina Sakers		Eroglu	"Neuroligins Control Astrocyte Morphology through Interactions with WW Binding Proteins"
15	Ping Dong		Huanghe Yang	"Decoding the Neurological Function of the Midline Thalamus in Absence Epilepsy"
16	Rhodry Brown		Matsunami	"Engineering Towards Ligand Selectivity in Insect Odorant Receptors"
17	Fernando Santos Valencia		Franks	"Circuits for Odor Discrimination and Odor Generalization in the Mouse Piriform Cortex"
18	Yi Li		Huang	"Cortical Circuits for Forelimb Reach-to-Consume"
19	Ziyi Gong		Brunel	"Sequential Activity in a Dynamically Balanced E-I Network with Various Plasticity Rules"
20	Stuart Behling		Lisberger	"Degraded Motion Reliability Reduces Eye Speed during the Initiation of Smooth Pursuit Eye Movements through Changing the Signal-to-Noise Ratio of the Population Response in Area MT"

21	Yang Chen		Rebecca Yang	<i>"Flexible Adjustment of Behavioral and Neural Strategies during Spatial Learning in Drosophila"</i>
22	Jeffrey Russ		Huang	<i>"The Selective Susceptibility of Intratelencephalic (IT) Neuron Subpopulations to Perinatal Hypoxic-Ischemic Encephalopathy (HIE)"</i>
23	Meredith Schmehl		Groh	<i>"Visual Cues Bias Single-Trial Responses in the Macaque Inferior Colliculus to Favor a Visually-Paired Sound"</i>
24	Federica Mosti		Silver	<i>"Species-Specific Enhancer Activity of HAR1984 in Cortex Development"</i>
25	Julia Dziabis		Bilbo	<i>"Investigating Developmental Microglial-Parvalbumin Interneuron Interactions in Microglial-MyD88 Deficient Mice"</i>
26	Martin Bohlen		Sommer	<i>"Development of Viral Vectors for Cross-Species Comparisons of Collicular Projecting Retinal Ganglion Cells"</i>
27	Adam Miltner		Kay	<i>"Defining the Molecular Signatures of Retinal Astrocyte Maturation using Single Cell RNA Sequencing"</i>
28	Jorg Grandl		Grandl	<i>"The Energetics of Rapid Cellular Mechanotransduction"</i>
29	Yu Feng		Brunel	<i>"Attractor Neural Network with Metastable Synapses"</i>
30	Bernard Slater		Mooney	<i>"Auditory Midbrain Projection Mapping of Excitatory and Inhibitory Subpopulations"</i>
31	Matt Oliver		Calakos	<i>"New SINAPS Reporters for Real-Time and Spatial Imaging of Protein Synthesis in Synaptic Plasticity"</i>
32	J. Russell Ravenel		Tadross	<i>"Development and Validation of Antipsychotic DARTs to Explore Mechanisms of Extrapyrmidal Symptoms"</i>
33	Nicole Bryant		Andrew West	<i>"Investigating the Role of Rab10 in Idiopathic Parkinson's Disease"</i>
34	DEI Committee			<i>"Assessing the Climate and Culture of Duke Neurobiology"</i>
35	David Herzfeld		Lisberger	<i>"Information Transmission in the Cerebellum: The Role of Rate and Synchrony during Smooth Pursuit"</i>
36	Carlo Vignali		Hull	<i>"Cerebellar Climbing Fibers Signal Context-Dependent Reward Predictions"</i>
37	Andrew Aldridge		Anne West	<i>"Replication Dependent Linker Histone H1.4 Continues to Accumulate in Post-Mitotic Neurons"</i>
38	Whit Jacobs		Naumann	<i>"Predicting Interactions of Motion-Processing Neurons with Recurrent Neural Networks"</i>
39	TJ Wagner		Glickfeld	<i>"dCas9-KRAB Recruitment at Arc Promoter and Enhancer Regions Alters the Tuning of V1 Neurons"</i>
40	Abigail Poff		Silver	<i>"Investigating the Impact of a Pathogenic DDX3X Missense Mutation upon Cortical Development"</i>
41	Marie Cronin		Grandl	<i>"Non-Canonical Modulation of Piezo Mechanotransduction by Membrane Geometry"</i>
42	Trevor Alston		Pearson	<i>"Decomposing Neural Data With SPLAT (Sparse Pattern Learning Across Time)"</i>
43	Laura Rupprecht		Bohórquez	<i>"A Gut Cell for Food Reward"</i>
44	Yongjun Qian		Huang	<i>"Programmable RNA Sensing for Cell Monitoring and Manipulation"</i>

Poster Session II

Thursday, September 29, 2022, 5:15pm-7:30pm



Graduate Student



Postdoc





















Lab Affiliate



Principal Investigator

	Name		Lab	Title
1	Marija Rudzite		Field	<i>"Determining the Visual Signals sent by Retinal Ganglion Cells to the Superior Colliculus"</i>
2	Mariah Hazlett		Anne West	<i>"Brevican in Adult Nucleus Accumbens PV+ Interneurons Stabilizes their Synaptic Inputs and Limits Development of Cocaine Memories"</i>
3	Xu An		Huang	<i>"A Cortical Circuit for Oro-Manual Dexterity in Handling and Manipulation"</i>
4	Elizabeth O'Gorman		Pearson	<i>"Integration of Deep Learning Models for Real-Time Analysis"</i>
5	Madeline Clark		Bilbo	<i>"Prenatal Opioid Exposure Alters Microglia-Dopamine System Interactions"</i>
6	Camila Manso Musso		Silver	<i>"Roles for Subcellularly Localized Dync1li2 in Radial Glial Progenitors during Cortical Development"</i>
7	DEI Committee			<i>"Assessing the Climate and Culture of Duke Neurobiology"</i>
8	Justice Lu		Matsunami	<i>"Using Single Cell Pseudotime Lineage Tracing to Identify Co-Regulated Genes in Olfactory Neuron Development"</i>
9	Caitlin Paisley		Kay	<i>"Cell-Surface Signals on Developing Astrocytes Promote their Elimination by Microglia"</i>
10	Winston Liu		Bohórquez	<i>"Sensory Transduction of Gut Microbial Patterns"</i>
11	Juliane Krueger		Disney	<i>"Early and Mid-Level Visual Cortical Areas of Macaque Monkeys show Differing Proportions and Laminar Expression Patterns of Parvalbumin, Calbindin, and Calretinin"</i>
12	Neil Rogers		Bilbo	<i>"Ethanol Consumption and Effects on Parvabumin Interneurons and Perineuronal Nets in Microglial-MYD88 Deficient Mice"</i>
13	Tierney Daw		Hull	<i>"Simple and Complex Orientation Selective Ganglion Cells in the Retina"</i>
14	Elizabeth Matthews		Southwell	<i>"Exploring the Design and Modification of Cortical Inhibitory Circuits"</i>
15	Veronica Galvin		Disney	<i>"Investigating the Effects of Nicotinic Receptor Activation in Granular V1 on Supragranular and Infragranular V1"</i>
16	Aryana Yousefzadeh		Tadross	<i>"Deconstructing the Cholinergic Basis of Opioid Addiction"</i>
17	Peter Weng		Bohórquez	<i>"A Gut Sense for Dietary Amino Acids"</i>
18	Michael Sindoni		Grandl	<i>"Adaptation of Cellular Mechanotransduction"</i>
19	Juan Valdez-Lopez		Kay	<i>"Studying Astrocyte-Guided Retinal Angiogenesis using an Explant Assay"</i>
20	Kathryn Walder		Dzirasa	<i>"Development of a Sleep State Classifier using Brain Dynamics"</i>

21	Matthew Loring		Naumann	<i>"Development of Visuomotor Behaviors and Underlying Neural Circuitry in Larval Zebrafish"</i>
22	Sasha Burwell		Tadross	<i>"GABAergic Synaptic Control of Dopamine as an Expertise Signal in Error-Based Learning"</i>
23	Hemanth Mohan		Huang	<i>"Cortical Glutamatergic Projection Neuron Types Contribute to Distinct Functional Subnetworks"</i>
24	Matthew Tegowski		Meyer	<i>"Revealing the mRNA Methylation Landscape across Cell Types in the Mouse Cortex using Single-Cell m6A Profiling"</i>
25	Arpine Sokratian		Andrew West	<i>"Gut Mucosal Cells Transfer Pathological Alpha-Synuclein to the Vagus"</i>
26	Augustus Lowry		Huanghe Yang	<i>"Characterization of Novel Movement Disorder-Associated KCNMA1 Variants"</i>
27	Arthy Narayanan		Anne West	<i>"Role of NPAS4 in Enhancer-Mediated Gene Regulation"</i>
28	Leykashree Nagendren		Eroglu	<i>"Elucidating the Upstream Regulators of Astrocyte Maturation using in vivo Genome-Wide Profile of Histone Modifications"</i>
29	Chengcheng Du		Volkan	<i>"The Effect of Social Experience on Gene Regulation, Neural Activity and Behaviors of Drosophila"</i>
30	Alexis Ceasrine		Bilbo	<i>"Maternal Diet Disrupts the Placenta-Brain Axis in a Sex-Specific Manner"</i>
31	Lan Luo		Glickfeld	<i>"Rapid Adaptation Impacts the Population Coding of Parametric and Natural Stimuli in Mouse Visual Cortex"</i>
32	Amanda Lewis		Grandl	<i>"Piezo1 Ion Channel Pore Opening Modulates TREK-1 Mechanosensitive Currents"</i>
33	Jesse Herche		Groh	<i>"Can Vision Modulate the Ear? Recordings in Human Ear Canals during Observation of Silent Visual Stimuli"</i>
34	Christopher Wickware		Moore	<i>"(TRP)ing Over Sex: The Sexually Dimorphic Role of TRPV4 in Rodent Models of Migraine Pain"</i>
35	Benjamin Devlin		Bilbo	<i>"Neuron-Microglia Crosstalk in Development: A New Role for the Neuron-Derived Cytokine IL34 in Microglial Function"</i>
36	Fabiola Duarte		Mooney	<i>"In Search of Corollary Discharge Signals in the Songbird Auditory Cortex"</i>
37	Aaron Halvorsen		Anne West	<i>"p300 is Crisp, but KRAB is CRISPR: Troubleshooting Transgenic dCas9 Mouse Lines"</i>
38	Thomas Harmon		Mooney	<i>"Acoustic, Orofacial, and Neural Correlates of Vocalization in the Mouse Auditory Cortex"</i>
39	Hazel Jackson		Franks	<i>"Investigating Neural Substrates of the Social Transmission of Food Safety"</i>
40	Shreyas Suryanarayana		Huang	<i>"Cortical Circuits of Visuospatial Selective Attention"</i>
41	S. Monroe		Bilbo	<i>"Neuroimmune Response to Respiratory Infection"</i>
42	Sage Martineau		Kay	<i>"scRNA Seq Reveals a Microglial Population Selectively Associated with Nerve Fiber Layer Astrocytes in Developing Retina"</i>
43	Marie Hemelt		Hull	<i>"Identifying Cell Types in Neuropixel Recordings from the Cerebellar Cortex of Awake Mice using Optotagging and Pharmacology"</i>
44	Zac Caffall		Calakos	<i>"Ritonavir Activates the Integrated Stress Response and Corrects Diverse Dystonia Phenotypes Across Development"</i>

List of Attendees

<i>Karim Abdelaal</i>	<i>Veronica Galvin</i>	<i>Winston Liu</i>	<i>Shaolin Ruan</i>
<i>Aghil Abed Zadeh</i>	<i>Sara Gannon</i>	<i>Elana Lockshin</i>	<i>Marija Rudzite</i>
<i>Andrew Aldridge</i>	<i>Lindsey Glickfeld</i>	<i>Matthew Loring</i>	<i>Laura Rupprecht</i>
<i>Trevor Alston</i>	<i>Ziyi Gong</i>	<i>Augustus Lowry</i>	<i>Jeffrey Russ</i>
<i>Emily Alway</i>	<i>Jorg Grandl</i>	<i>Justice Lu</i>	<i>Kristina Sakers Hays</i>
<i>Xu An</i>	<i>Jennifer Groh</i>	<i>Lan Luo</i>	<i>Josiah Sampson IV</i>
<i>Stuart Behling</i>	<i>Sarah Hadyniak</i>	<i>Camila Manso Musso</i>	<i>Fernando Santos Valencia</i>
<i>Staci Bilbo</i>	<i>Victoria Hall</i>	<i>Sage Martineau</i>	<i>Miranda Scalabrino</i>
<i>Robin Blazing</i>	<i>Aaron Halvorsen</i>	<i>Miles Martinez</i>	<i>Meredith Schmehl</i>
<i>Martin Bohlen</i>	<i>Tom Harmon</i>	<i>Yuleika Martinez Castillo</i>	<i>Drew Schreiner</i>
<i>Diego Bohórquez</i>	<i>Maggie Hayes</i>	<i>Karina Matos</i>	<i>Justine Shih</i>
<i>Alev Brigande</i>	<i>Mariah Hazlett</i>	<i>Hiro Matsunami</i>	<i>Shai Silberberg</i>
<i>Rhodry Brown</i>	<i>Marie Hemelt</i>	<i>Elizabeth Matthews</i>	<i>Debby Silver</i>
<i>Nicole Bryant</i>	<i>Jesse Herche</i>	<i>Jim McNamara</i>	<i>Michael Sindoni</i>
<i>Sasha Burwell</i>	<i>Alam Hernandez Coss</i>	<i>Audrey Mercer</i>	<i>Bernard Slater</i>
<i>Zachary Caffall</i>	<i>David Herzfeld</i>	<i>Amari Michaux</i>	<i>Arpine Sokratian</i>
<i>Nicole Calakos</i>	<i>Mariana Holguin Lopez</i>	<i>Adam Miltner</i>	<i>Derek Southwell</i>
<i>Celine Cammarata</i>	<i>Mariah Hoye</i>	<i>Hemanth Mohan</i>	<i>Sweta Srivas</i>
<i>Brayan Campos Salazar</i>	<i>Josh Huang</i>	<i>S. Monroe</i>	<i>David St-Amand</i>
<i>Megan Carey</i>	<i>Dhananjay Huilgol</i>	<i>Rich Mooney</i>	<i>Samuel Strader</i>
<i>Rene Carter</i>	<i>Court Hull</i>	<i>Cameron Morris</i>	<i>Shreyas Suryanarayana</i>
<i>Alexis Ceasrine</i>	<i>Hazel Jackson</i>	<i>Federica Mosti</i>	<i>Michael Tadross</i>
<i>Yang Chen</i>	<i>Whit Jacobs</i>	<i>Leykashree Nagendren</i>	<i>Elizabeth Tanner</i>
<i>Kirill Chesnov</i>	<i>Shuyang Jin</i>	<i>Arthy Narayanan</i>	<i>Matthew Tegowski</i>
<i>Maddie Clark</i>	<i>Juliette Jordan</i>	<i>Eva Naumann</i>	<i>Mishek Thapa</i>
<i>Marie Cronin</i>	<i>Min Ju Lee</i>	<i>Thomas Nguyen</i>	<i>Juan Valdez-Lopez</i>
<i>Tierney Daw</i>	<i>Kathryn K Walder</i>	<i>Max Nikitchenko</i>	<i>Leslie Vazquez-Rangel</i>
<i>Claire de March</i>	<i>Suyang Kan</i>	<i>Liz O'Gorman</i>	<i>Dmitry Velmeshev</i>
<i>Benjamin Devlin</i>	<i>Katherine Kaplan</i>	<i>Matt Oliver</i>	<i>Carlo Vignali</i>
<i>Carolyn Diaz</i>	<i>Jeremy Kay</i>	<i>Sevgi Öztürk</i>	<i>TJ Wagner</i>
<i>Anita Disney</i>	<i>Graciela Kiesling</i>	<i>Caitlin Paisley</i>	<i>Peter Weng</i>
<i>Ping Dong</i>	<i>Cindy King</i>	<i>John Pearson</i>	<i>Andy West</i>
<i>Chengcheng Du</i>	<i>Connor King</i>	<i>Abby Poff</i>	<i>Anne West</i>
<i>Fabiola Duarte Ortiz</i>	<i>Tiffany Ko</i>	<i>Sarah Proctor</i>	<i>William Wetsel</i>
<i>Hai Dun Yan</i>	<i>Wenjuan Kong</i>	<i>Carlos Puerto</i>	<i>Christopher Wickware</i>
<i>Timothy Dunn</i>	<i>Juliane Krueger</i>	<i>Jiaxuan Qi</i>	<i>Hermione Xu</i>
<i>Julia Dziabis</i>	<i>Oluwadamilola Lawal</i>	<i>Yongjun Qian</i>	<i>Dong Yan</i>
<i>Callie Eatman</i>	<i>Phoebe Lee</i>	<i>Daniel Quintero</i>	<i>Rebecca Yang</i>
<i>Steven Eliades</i>	<i>Amanda Lewis</i>	<i>Vijyendra Ramesh</i>	<i>Xiaolu Yang</i>
<i>Chantell Evans</i>	<i>Jennifer Li</i>	<i>Juan Ramirez</i>	<i>Na Young Jun</i>
<i>Yu Feng</i>	<i>Jiayun Li</i>	<i>Russell Ravenel</i>	<i>Aryana Yousefzadeh</i>
<i>Kayla Fernando</i>	<i>Qiang Li</i>	<i>Naama Reicher</i>	<i>Shion Yuki</i>
<i>Greg Field</i>	<i>Shuoyi Li</i>	<i>Joseph Rittiner</i>	<i>Yida Zhang</i>
<i>Kaitlyn Fouke</i>	<i>Yi Li</i>	<i>Corey Roach</i>	<i>Zijian Zhang</i>
<i>Erin Fykes</i>	<i>Steve Lisberger</i>	<i>Neil Rogers</i>	<i>Tingan Zhu</i>