

SPRING HIPPOCAMPAL RESEARCH CONFERENCE

Hotel Villa Diodoro, Taormina, Sicily

2-7 June, 2019

SCIENTIFIC PROGRAM

SUNDAY, 2 June

7:30 am- Registration

Please come early to register so that everyone is ready for the start at 8:30 am.

8:30 am Welcome and Announcements; information about meals and trips

8:45-9:45 am Session 1: "Hippocampal processing deficits contributing to cognitive deficits in models of epilepsy"

Tristan Shuman, Chair

- **Tristan Shuman** (Mount Sinai, USA) "Breakdown of spatial coding and interneuron synchronization in epileptic mice"
- **Laura Ewell** (University of Bonn, Germany) "The impact of pathological high frequency oscillations on hippocampal network activity in epileptic rats"
- **Jennifer Gelin** (Columbia University, USA) "Distributed network effects of interictal epileptiform activity: implications for cognition"
- **Tony Kelly** (University of Bonn, Germany) "Loss of spatio-temporal input pattern detection in dendrites of CA1 neurons in a mouse epilepsy model"

9:45- 10:30 am Data Blitz 1

- **Michele Nardin** (IST, Austria) "Spatial information exchange between hippocampus and medial prefrontal cortex"
- **Karola Käfer** (IST, Austria) "Prefrontal and hippocampal activity during rule-switching"
- **Igor Gridchyn** (IST, Austria) "Assembly-specific disruption of reactivation leads to selective memory deficit"
- **Xiaomin Zhang** (IST, Austria) "Sparse coding in identified dentate gyrus granule cells in head-fixed running mice"
- **Lukas Kunz** (University of Freiburg, Germany) "Single neuron representations of place and direction in human MTL"

10:30 - 11:15 am Coffee break

11:15- 12:00 pm Session 2: "Disinhibitory circuits: cell types, connectivity, and function in behaving animals"

Klas Kullander and Lisa Topolnik, Co-Chairs

- **Klas Kullander** (Uppsala Univ., Sweden) "OLM α 2 cells in bidirectional modulation of CA1 microcircuits and behavior"
- **Lisa Topolnik** (Laval University, Canada) "Hippocampal disinhibitory circuits: cell types, connectivity, and recruitment in vivo"
- **Robert Sloviter** (Morehouse School of Medicine, Atlanta, USA) "Targeted hippocampal GABA neuron ablation causes hippocampal sclerosis and chronic epilepsy"

12:00 - 12:30 pm Data Blitz 2

- **Jack Mellor** (University of Bristol, UK) "Regulation of hippocampal circuit function and plasticity by acetylcholine"
- **Csaba Varga** (University of Pecs, Hungary) "Selectivity of dendritic inhibition in the medial entorhinal cortex"
- **Joshua Julian** (Kavli Institute, NTNU, Norway) "Development of entorhinal representations of visual space"

12:30 - 2:00 pm Free for Lunch

2:00 - 3:15 pm Session 3: “The other hippocampal output: navigating from the hippocampus to the retrosplenial cortex via the subiculum”

Koen Vervaeke, Chair

- **Mark Cembrowski** (Janelia Research Campus, USA) “Cell-type-specific rules of a subiculum-dependent memory”
- **Andrew Alexander** (Boston University, USA) “Egocentric coding in the retrosplenial cortex”
- **Dora Angelaki** (Baylor College of Medicine, USA) “Allocentric versus egocentric perspectives in retrosplenial cortex”
- **Koen Vervaeke** (Oslo University, Norway) “Analysis of self-motion representations in the mouse retrosplenial cortex using two-photon microscopy”
- **Debora Ledergerber** (NTNU, Trondheim, Norway) “Multiplexed activity in subiculum during a spatial working memory task”

3:15 - 4:00 pm Coffee break

4:00 - 5:00 pm Session 4: “RNA metabolism and novel therapeutic approaches in temporal lobe epilepsy”

Jochen Meier, Chair

- **Oren Ram** (The Hebrew University of Jerusalem, Israel) “Highly sensitive single cell-based platform for comprehensive characterization of hippocampal neurogenesis using pluripotent stem cells”
- **Jochen Meier** (Technical University Braunschweig, Germany) “Hippocampal neuron type-specific effects of glycine receptor C-U RNA editing in temporal lobe epilepsy”
- **Pawel Fidzinski** (Charité – Universitätsmedizin Berlin, Germany) “Human slices and organotypic slice cultures - preclinical tools for CNS drug validation”
- **Carola Haas** (Universitätsklinikum Freiburg, Germany) “Structural and functional hippocampal plasticity in experimental epilepsy”

5:00 - 7:00 pm Session 5: “Law and order in spatial representations”

Alessandro Treves, Chair

- **Karel Jezek** (Charles Univ., Pilsen, Czech Republic) “Competition between rival maps in the hippocampus”
- **Remi Monasson** (ENS, Paris, France) “Two ways of taking out a competing place cell map”
- **Cliff Kentros** (NTNU, Trondheim, Norway) “Mild disorder: rate remapping in grid cells”
- **Davide Spalla** (SISSA, Trieste, Italy) “Is global remapping allowed for grid cells?”
- **Gily Ginosar** (Weizmann Inst, Rehovot, Israel) “Unruly nature of grid cells revealed in 3D”
- **Federico Stella** (IST Vienna, Austria) “Partial disorder as the only way for grid cells to co-exist”
- **Charlotte Boccara** (University of Oslo, Norway) “The entorhinal cognitive map is attracted to goals”
- **Yoram Burak** (The Hebrew University of Jerusalem, Israel) “Functional consequences of dynamic coupling between place cells and grid cells”

End of Sunday program

MONDAY, 3 June

8:30- 10:00 am Session 6: “The heterogeneity of primate hippocampal theta: form and function”

Joshua Jacobs and Simon Hanslmayr, Co-chairs

- **Jon Rueckemann** (University of Washington, USA) “Theta in the monkey hippocampus”
- **Daniel Bush** (University College London, UK) “Human hippocampal theta in spatial and episodic memory function”
- **Joshua Jacobs** (Columbia University, USA) “Slow and fast theta oscillations in the human hippocampus”
- **Simon Hanslmayr** (University of Birmingham, UK) “The role of human hippocampal oscillations and neural firing during associative memory formation”
- **Nanthia Suthana** (University of California, Los Angeles, USA) “Properties of human hippocampal theta oscillations during ambulatory spatial navigation”
- **Tim Tierney** (University College London, UK) “Non-invasive measurements from human hippocampus using a wearable magnetoencephalography system”

10:00 - 10:45 am Coffee break

10:45 - 11:30 am Data Blitz 3

- **Peter Jedlicka** (Justus Liebig University Giessen, Germany) "A new compartmental model of mature and adult-born dentate granule cells stable across different morphologies"
- **Janina Gasthaus** (University Medical Center Hamburg-Eppendorf, Germany) "Mental retardation in phenylketonuria; the link between catecholamines and microglia"
- **Albert M Barth** (KOKI, Hungary) "Median raphe control over hippocampal oscillatory activity"
- **Barbora Slavikova** (Czech Academy of Sciences, Prague, Czech Republic) "Synthetic testosterone derivatives modulate rat P2X2 and P2X4 receptor channel gating"
- **Hana Chodounska** (Czech Academy of Sciences, Prague, Czech Republic) "3-Hemiesters of estradiol with lipophilic C-17 modifications; novel potentiators of the NMDA receptor"
- **Walter Fischler** (Columbia University, NY, USA) "The role of odor landmarks in place cell formation and navigation"

11:30 - 12:30 pm Session 7: "Catecholaminergic modulation of memory persistence in the hippocampus"

Lisa Genzel and Tomonori Takeuchi, Co-chairs

- **Kaoru Inokuchi** (University of Toyama, Japan) "Organization of memory engram in the hippocampus"
- **Gina Poe** (UCLA, USA) "The timing of noradrenaline for memory consolidation across sleep: a time to fire and a time to refrain from firing"
- **Oxana Eschenko** (Max Planck Institute, Germany) "Retrospective and prospective views on the temporal dynamics of the noradrenaline involvement in memory"
- **Tomonori Takeuchi** (Aarhus University, Denmark) "Dopaminergic memory modulation by two distinct novelty systems"

12:30 - 2:00 pm Free for Lunch

2:00 - 3:15 pm Session 8: "Synaptopodin, the spine apparatus and the cisternal organelle - from synapses to networks"

Thomas Deller, Chair

- **Thomas Deller** (Frankfurt, Germany) "Synaptopodin - an organizer of endoplasmic reticulum in hippocampal neurons"
- **Alexander Drakew** (Hamburg/Frankfurt, Germany) "The spine apparatus enforces synaptic plasticity at single hilar mossy fiber boutons"
- **Maren Engelhardt** (Heidelberg/Mannheim, Germany) "A role for the cisternal organelle in axon initial segment plasticity"
- **Gabriele Rune** (Hamburg, Germany) "Sex-specific aspects of synaptopodin and the spine apparatus"
- **Andreas Vlachos** (Freiburg, Germany) "The spine apparatus and synaptic plasticity; one organelle to rule them all?"

3:15 - 3:45 pm Data Blitz 4

- **Salman Qasim** (Columbia University, NYC, USA) "Memory retrieval modulates spatial tuning of single units in the human medial temporal lobe"
- **Félix Leroy** (Columbia University, NYC, USA) "A circuit from hippocampal CA2 to lateral septum disinhibits social aggression"
- **Bálint Lasztóczy** (Medical University of Vienna, Austria) "GABAergic mechanisms of hippocampal gamma oscillations in awake mice"
- **Kelsey Canada** (University of Maryland, USA) "Longitudinal changes in hippocampal subfield volume predict improvements in memory ability during early to mid-childhood"

3:45- 4:30 pm Coffee break

4:30-5:30 pm Session 9: "Large scale modeling of the hippocampus"

Michele Migliore, Chair

- **Michele Migliore** (National Research Council, Italy) "Introduction to large-scale modeling of the hippocampus"
- **Frances Skinner** (UNH, Canada) "Creating and leveraging CA1 microcircuit models to understand theta rhythm generation"
- **Szabolcs Kali** (KOKI, Hungary) "State-dependent dynamics, learning, and the emergence of activity sequences in models of hippocampal area CA3"
- **Armando Romani** (EPFL, Switzerland) "A full-scale model of the CA1 circuit implemented using a unified data-driven modeling workflow"

5:30- 6:30 pm Session 10: "Neurosteroids, oxysterols, and hippocampal functions"

Steven Mennerick and Mariangela Chisari, Co-chairs

- **Mariangela Chisari** (University of Catania, Italy) "New pregnenolone sulfate-like modulators of NMDAR: insights in cellular accumulation and retention"
- **Eva Kudova** (Czech Academy of Sciences, Czech Republic) "Synthetic 5 β -reduced neurosteroids as neuroprotective agent in both in vitro and in vivo models"
- **Nathalie Cartier** (INSERM ICM, France) "Consequences of CYP46A1 gene transfer in hippocampus on cholesterol pathway and hippocampal function"
- **Steven Mennerick** (Washington University in St. Louis, USA) "24S-hydroxycholesterol effects on mouse hippocampus: from transcription to behavior"

End of Monday program

TUESDAY, 4 June

8:30- 9:45 am Session 11: "New insights into pathophysiological mechanisms underlying hippocampal dysfunction in Alzheimer's disease"

Ottavio Arancio and Claudio Grassi, Co-chairs

- **Stefan Lichtenthaler** (DZNE, German Center for Neurodegenerative Diseases, Munich, Germany) "Substrates and functions of the hippocampal protease BACE1"
- **Kei Cho** (King's College London, UK) "Pathophysiological role of Tau in hippocampal synaptic structure and function"
- **Ottavio Arancio** (Columbia University, New York, NY, USA) "On the role of amyloid-precursor protein in the impairment of hippocampal synaptic plasticity and memory caused by A β and Tau oligomers"
- **Claudio Grassi** (Università Cattolica Medical School, Rome, Italy) "Accumulation of Alzheimer's disease hallmarks impairs hippocampal plasticity and memory in HSV-1-infected mice"
- **Paul Fraser** (University of Toronto, Canada) "SUMOylation pathways in neurodegeneration"

9:45 - 10:30 am Data Blitz 5

- **Adrian Duszkievicz** (McGill University, Canada) "Thalamic reticular nucleus exerts inhibitory control on the head-direction signal"
- **Miriam Nokia** (University of Jyväskylä, Finland) "Disrupting dentate spike-related neural processing affects learning in rats"
- **Alessia Mastrodonato** (Columbia University, NYC, USA) "Prophylactic (R,S)-ketamine attenuates learned fear by modulating hippocampal memory traces"
- **Manuela Allegra** (Institut Pasteur, Paris, France) "Neuronal discrimination of similar sensory inputs during hippocampal memory encoding"
- **Øyvind Arne Høydal** (NTNU) "Object-Vector Coding in the Medial Entorhinal Cortex"

10:30 - 11:15 am Coffee break

11:15 - 12:30 pm Session 12: "Lateral entorhinal cortex: mechanisms and circuits"

James Ainge, Chair

- **Kaori Takehara-Nishiuchi** (University of Toronto, Canada) "Situation code in the lateral entorhinal cortex"
- **Brianna Vandrey** (University of Edinburgh, UK) "LEC layer II fan cells are critical for episodic memory"
- **James Ainge** (University of St Andrews, UK) "Integrating features of episodic memory in LEC-hippocampal circuits"
- **Eirik Stamland Nilssen** (NTNU, Norway) "Connectivity of fan cells in layer II of lateral entorhinal cortex"
- **Kei Igarashi** (UC Irvine, USA) "Dissecting circuits in lateral entorhinal cortex underlying associative learning"

12:30 - 2:00 pm Free for Lunch

2:00 - 3:00 pm Session 13: "Cellular and circuit mechanisms for spatial representations"

Jerome Epsztein and **Matt Nolan**, Co-chairs

- **Desdemona Fricker** (CNRS, Descartes University, Paris, France) "Cells and circuits for head direction coding; neuronal properties and synaptic interactions in the presubiculum"
- **Jerome Epsztein** (Aix-Marseille University, INSERM, Marseille, France) "Intracellular determinants of CA1 pyramidal cells activation or silencing during locomotion"
- **Jeffrey Magee** (Baylor College of Medicine, TX, USA) "Mechanisms of experience-dependent CA1 representations"
- **Daniel A. Dombeck** (Northwestern University, IL, USA) "Optical recording of synaptic inputs to place cells"

3:00 - 3:30 pm Data Blitz 6

- **Holly Hunsberger** (Columbia University, NYC, USA) "Sex, anxiety, and the hippocampus: Intersections in Alzheimer's disease"
- **Ohad Reznitz** (Technion, Israel) "Hippocampal place cells demonstrate pattern completion and separation deficits in a novel tactile-morph task in a mouse Alzheimer's model"
- **David Vanier** (SUNY Stony Brook, NY, USA) "Macroevolution of the hippocampal formation in primates"

3:30-4:15 pm Coffee break

4:15 - 5:30 pm Session 14: "Chasing multiple engrams with activity-dependent and large-scale imaging strategies"

Steve Ramirez and **Denise Cai**, Co-chairs

- **Steve Ramirez** (Boston University, USA) "Population and projection-specific segregation of fear and reward engrams in the hippocampus"
- **Michael Drew** (University of Texas at Austin, USA) "Fear extinction representations in the hippocampus"
- **Denise Cai** (Mount Sinai, NYC, USA) "Linking memories"
- **Christine Denny** (Columbia University, NYC, USA) "Propranolol decreases fear expression by modulating memory traces in the dorsal dentate gyrus"
- **Tomas Ryan** (Trinity College, Ireland) "The evolution and development of memory engrams"

5:30 - 6:45 pm Session 15: "Organisation and function of hippocampal targets in the deep entorhinal cortex"

Matt Nolan, Chair

- **Shinya Ohara** (NTNU, Trondheim, Norway) "Local circuits of layer Vb neurons in the lateral and medial entorhinal cortex"
- **Alexei Egorov** (Heidelberg, Germany) "Differential parallel processing of hippocampal network activity in the deep layers of the entorhinal cortex"
- **Sonia Gasparini** (LSU Health, New Orleans, USA) "Dendritic features of entorhinal layer V neurons"
- **David Rowland** (NTNU, Trondheim, Norway) "Functional characterization of cells in layer V of the medial entorhinal cortex"
- **Matt Nolan** (Edinburgh, Scotland) "Synaptic organisation of layer 5b of the medial entorhinal cortex"

End of Tuesday program

WEDNESDAY, 5 June

8:30-10:00 am Session 16: “Cellular and molecular regulation of hippocampal and cerebral cortical neurogenesis”

Laurent Nguyen, Chair

- **Noelia Urbán** (IMBA, Austria) “Intrinsic and systemic control of adult neurogenesis”
- **Simon Hippenmeyer** (IST, Austria) “Mechanisms generating cell-type diversity in neocortex and hippocampus”
- **Fiona Francis** (Institut du Fer à Moulin, France) “Early-born hippocampal neurons are abnormally positioned in doublecortin knockout mice and exhibit mitochondrial abnormalities”
- **Laurent Nguyen** (ULiege/GIGA-R, Belgium) “Cell migration promotes dynamic cellular interactions to control cerebral cortex morphogenesis”
- **Silvia Cappello** (Max Planck, Germany) “Mechanisms regulating human neurogenesis”
- **Victor Borrell** (Instituto de Neurociencias de Alicante, Spain) “Transcriptional control of cortical neurogenesis and folding”

10:00- 10:30 am Data Blitz 7

- **Noam Nitzan** (Charité Universitätsmedizin, Germany) “Cell-type specific routing of hippocampal output during fast oscillations”
- **Soraya Dunn** (University College London, UK) “Oscillatory dynamics of the ferret hippocampus”
- **Michele Pignatelli** (MIT, USA) “Engram cell excitability state determines the efficacy of memory retrieval”

10:30 - 11:00 am Coffee break

11:00 – 12:30 pm Session 17: “Role of ripple sequences and replay in learning and memory”

Antonio Fernandez-Ruiz, Chair

- **Fabian Kloosterman** (KU Leuven, Belgium) “Real-time classification of experience-related ensemble spiking patterns for closed-loop applications”
- **Jozsef Csicsvari** (IST, Austria) “Reactivation of planned trajectories during radial eight arm maze tasks”
- **Antonio Fernandez-Ruiz** (NYU, USA) “Closed-loop optogenetic prolongation of ripple sequences improves memory performance”
- **Brad Pfeiffer** (UT Southwestern, USA) “Experience-dependent interaction between theta sequences and ripple-based replay”
- **Freyja Olafsdottir** (UCL, UK) “Hippocampal-entorhinal replay dynamics supporting learning”
- **Shantanu Jadhav** (Brandeis University, USA) “Hippocampal-prefrontal replay supports retrospective and prospective evaluation for spatial learning”

12:30 - 2:00 pm Free for Lunch

2:00 – 3:30 pm Session 18: “Surviving stress: resilience and the hippocampus”

Nesha Burghardt and Christoph Anacker, Co-chairs

- **Christoph Anacker** (Columbia University, USA) “Inhibiting ventral dentate gyrus activity prevents stress-induced psychopathology”
- **Nesha S Burghardt** (Hunter College, USA) “Dietary curcumin promotes resilience to social stress”
- **Tak Pan Wong** (McGill University, Canada) “Hippocampal memory engrams are cellular substrates for stress susceptibility and resilience”
- **Alireza Chenani** (Max Planck Institute of Psychiatry, Munich, Germany) “Hippocampal network configuration under stress”
- **Hongyu Zhang** (University of Bergen, Norway) “Modulation of AMPAR surface diffusion restores hippocampal plasticity in neurodegenerative and neuropsychiatric diseases”
- **Shona Chattarji** (NCBS, Bangalore, India) “Enriched environment and stress resilience”

3:30-4:15 pm Coffee break

4:15 - 5:30 pm Session 19: “The hippocampal CA2 region in social behavior and disease”

Steve Siegelbaum (Columbia University, USA), Chair

- **Serena Dudek** (NIEHS, Durham, NC, USA) “Novel role for a stress hormone receptor in the development and maintenance of CA2 neuron phenotype”
- **Rebecca Piskorowski** (INSERM, Paris, France) “Connecting the hypothalamus to the hippocampus: area CA2”
- **Thomas McHugh** (RIKEN Center for Brain Science, Japan) “CA2 modulation of the medial septum”
- **Azahara Oliva** (Columbia University, New York, USA) “CA2 sharp wave ripples regulate social memory”
- **Ute Haussler** (University of Freiburg, Germany) “Mossy fiber-CA2 circuits in temporal lobe epilepsy”

5:30 - 6:15 pm Session 20: “Diverse potential targets for the heterogenous symptoms of traumatic brain injury”

Akiva Cohen, Chair

- **Coleen Atkins** (University of Miami, USA) “The interaction of early life stress and mild traumatic brain injury on hippocampal function”
- **Viji Santhakumar** (University of California at Riverside, USA) “Innate immune signaling compromises hippocampal dentate E-I balance after brain injury”
- **Akiva Cohen** (CHOP/UPENN, USA) “Path specific E-I imbalances contribute to hippocampal involved behavioral dysfunction”

End of Wednesday program

THURSDAY, 6 June

8:30-10:30 am Session 21: “Behavior matters! Disentangling learning-dependent effects from spontaneous processes in sleep electrophysiology”

Adrien Peyrache and **Lisa Genzel**, Co-chairs

- **Karim Benchenane** (CNRS/ESPCI, France) “Human-like sleep scoring for the study of neuronal homeostasis and memory consolidation in rodent”
- **Laura Colgin** (University of Texas at Austin, USA) “Neuronal representations of space across waking behaviors and sleep states”
- **George Dragoi** (Yale University, USA) “Ontogeny of preconfigured and replay sequences”
- **David Dupret** (Oxford University, UK) “Differential SWR reactivation of theta co-firing windows”
- **Lisa Genzel** (Radboud Univ., Netherlands) “Behaviour and prefrontal cortex-hippocampus interactions during sleep”
- **Silvia Maggi** (University of Nottingham, UK) “Prefrontal cortex population coding of the present but not the past is carried forward into sleep”
- **Adrien Peyrache** (McGill University, Canada) “Thalamo-cortical mechanisms for sleep replay”
- **Matt van der Meer** (Dartmouth College, USA) “Motivational shifts bias hippocampal replay content away from the preferred outcome”

10:45 - 11:30 am Coffee break

11:30 - 12:30 am Session 22: “The influence of emotion, motivation, and reinforcement on hippocampal-dependent memories in humans”

Maureen Ritchey, Chair

- **David Clewett** (New York University, USA) “Emotion's carryover effects on novel memory integration”
- **Joseph Dunsmoor** (University of Texas, USA) “Mental context reinstatement balances retrieval of fear versus safety memories in the human brain”
- **Chi Ngo** (Temple University, USA) “Gain-loss framing enhances mnemonic discrimination in preschoolers”
- **Maureen Ritchey** (Boston College, USA) “Cortico-hippocampal networks supporting emotional episodic memories”

12:30 - 2:00 pm Free for Lunch

2:00 - 3:45 pm Session 23: "Hippocampal and cortical dysfunction in mouse models of intellectual disability and autism"

Lucas Pozzo-Miller, Enrico Tongiorgi, and Maurizio Giustetto, Co-Chairs

- **Barbara Bardoni** (INSERM IPMC-CNRS, Valbonne, France) "Role of phosphodiesterase 2A in Fragile X-associated hippocampal dysfunction"
- **Audrey Brumback** (UT Austin, USA) "Corticothalamic physiology in preclinical models of autism spectrum disorder"
- **Maurizio Giustetto** (University of Torino, Italy) "Developmental trajectory of thalamo-cortical connectivity during critical periods of plasticity in CDKL5 knock-out mice"
- **Gaia Novarino** (Institute of Science and Technology, Klosterneuburg, Austria) "The role of the intellectual disability gene SETD5 in learning and cognition"
- **Lucas Pozzo-Miller** (University of Alabama Birmingham, USA) "Dysfunction of the ventral hippocampus projection to the medial prefrontal cortex, and its role in social deficits in Rett syndrome"
- **Bernardo Sabatini** (Harvard, USA) "Multi-transmitter release in the mammalian brain"
- **Enrico Tongiorgi** (University of Trieste, Italy) "Restoring dendritic integrity in the hippocampus of a mouse model of Rett syndrome"

3:45 - 4:30 pm Coffee break

4:30 - 5:45 pm Session 24: "From what I perceive to where I am; coordinate transformation for navigation"

Adrien Peyrache and Dori Derdikman, Co-chairs

- **Xenia Gofman** (Technion, Israel) "Dissociation between post-rhinal cortex and downstream parahippocampal regions in the representation of egocentric boundaries"
- **Jake Hinman** (Boston U, USA) "Egocentric representation of environmental boundaries in the dorsomedial striatum"
- **Kate Jeffery** (University College London, UK) "Dimension reduction as a strategy for reducing cognitive load during navigation"
- **Cheng Wang** (Johns Hopkins University, USA) "Egocentric coding of external items in the lateral entorhinal cortex"
- **Mayank Mehta** (UCLA, USA) "Hippocampal anchor fields"

5:45 - 7:00 pm Session 25: "Beyond space: Encoding of time and other behavioral dimensions by hippocampal, entorhinal and related circuits"

Jiannis Taxis, Chair

- **Jiannis Taxis** (UCLA, USA) "Emergence and stability of hippocampal sequences encoding odors and time"
- **Jim Heys** (University of Utah, USA) "Specialized sub-circuits in medial entorhinal cortex encode elapsed time during immobility"
- **David Tingley** (NYU, USA) "Distributed phase coding; how are hippocampal sequences read out?"
- **Marc Howard** (Boston University, USA) "Coding of continuous dimensions for cognitive computation in the MTL and beyond"
- **Chris MacDonald** (MIT, USA) "A critical role for CA2 in the sequential organization of time cells supporting memory"

End of Thursday program

FRIDAY, 7 June

8:30-9:30 am Session 26: "Functional and anatomical organization of hippocampal output networks"

Gülşen Sürmeli, Chair

- **Stéphane Ciocchi** (University of Bern, Switzerland) "Neural circuits for emotions in the ventral CA1 hippocampus"
- **Miguel Remondes** (University of Lisbon, Portugal) "Hippocampal-medial mesocortex interactions during choice behaviors"
- **Gülşen Sürmeli** (University of Edinburgh, UK) "Anatomical organization of entorhinal output networks"
- **Andrew Macaskill** (University College London, UK) "Dichotomous functions of ventral hippocampal subcircuits"

9:30 - 10:45 pm Data Blitz 8

- **Tristan Stöber** (Simula Research Laboratory, Fornebu, Norway) and Andrew Lehr (University of Goettingen, Germany) “CA2 as a hippocampal sequence controller”
- **Stephanie Grella** (Boston University, USA) “Reactivation of hippocampus-mediated memories to disrupt the reconsolidation of fear”
- **Abby Basya Finkelstein** (Boston University, USA) “Ensemble dynamics in the hippocampus and amygdala mediate divergent fear memory retrieval in distinct affective states”
- **Liron Sheintuch** (Weizmann Institute, Israel) “Multiple maps of the same context stably coexist in the mouse hippocampus”
- **Alon Rubin** (Weizmann Institute, Israel) “Unsupervised analysis of large scale hippocampal neuronal activity”
- **Jiyun Shin** (Humboldt University of Berlin, Germany) “Perirhinal feedback input to layer 1 gates associative learning via burst activity”
- **Silvia Viana da Silva** (University of California San Diego, USA) “Network and memory impairment caused by CA3-specific APP expression”
- **Duncan MacLaren** (Heidelberg University, Germany) “Medial septal PV+ and CB+ GABAergic neurons have dissociable roles in MEC spatial coding and behavior”

10:45 - 11:30 am Coffee break

11:30 - 12:30 am Session 27: “Vestibular-hippocampal interactions”

Paul F. Smith, Chair

- **Stephane Besnard** (Univ. Normandie, France) “The effects of otolith deficiency on development in mice”
- **Martin Hitier** (Univ. Normandie, France) “How does vestibular input project into the hippocampus?”
- **Paul F. Smith** (Univ. Otago, New Zealand) “The effects of bilateral vestibular loss on hippocampal LTP”
- **Andreas Zwergal** (Univ. Munich, Germany) “Functional and structural hippocampal changes in vestibulopathies: insights from multimodal imaging in rodents and patients”

12:30 - 2:00 pm Free for Lunch

2:00 - 3:15 pm Session 28: “Spatio-temporal coding in the medial entorhinal cortex”

Kevin Allen, Magdalena Schlesiger, and Hannah Monyer, Co-chairs

- **Yi Lu** (University College London, UK) “Absence of visual input affects place and grid cell activity”
- **Cesar Renno-Costa** (Federal University of Rio Grande do Norte, Brasil) “Insights on hippocampal remapping from a competitive model of place and grid cells in a loop”
- **Magda Schlesiger** (Heidelberg University, Germany) “Dissociable roles of medial septal CB+ and PV+ long-range-projecting GABAergic neurons in MEC temporal coding”
- **Robert Munn** (Stanford University, USA) “Entorhinal velocity signals reflect environmental geometry”
- **Kevin Allen** (Heidelberg University, Germany) “Impact of visual landmarks on the spatial representations of the medial entorhinal cortex”

3:15 - 3:45 pm Data Blitz 9

- **John B. Trimmer** (University of Texas at Austin, USA) “Different co-activity patterns in place cell and grid cell networks”
- **Ernie Hwaun** (University of Texas at Austin, USA) “CA3 place cells that represent a novel waking experience are preferentially reactivated during sharp wave-ripples in subsequent sleep”
- **David Omer** (Weizmann Institute, Rehovot, Israel) “Episodic cells for self and other in the bat hippocampus”
- **Linda Katona** (Oxford University, UK) “Subcortical modulation and brain-state dependent activity of trilaminar GABAergic hippocampal subiculum-projecting cells”

3:45 – 4:45 pm Session 29: “Cortico-hippocampal conversations and memory”

Francesco Battaglia, Chair

- **Rob Sutherland** (University of Lethbridge, Canada) “Interactions between hippocampus and other cortical areas in recall of long-term memories; a crucial conversation”
- **Majid Mohajerani** (University of Lethbridge, Canada) “Accessing cortical-hippocampal dynamics and their interactions in wake and slow-wave sleep”
- **Anton Sirota** (Ludwig-Maximilians-Universität München, Germany) “Breathing rhythm coordinates limbic system dynamics during offline state”
- **Francesco Battaglia** (Radboud University, Nijmegen, The Netherlands) “Effects of learning on hippocampal-cortical interactions”

5:00 pm Aperitivo and farewell on the patio

END OF CONFERENCE

Map of Taormina (note restaurant location)

