13th Biennial Meeting

Society for Research on Biological Rhythms

Conference Program

May 19–23, 2012

Sandestin Golf and Beach Resort

Destin, Florida

Trainee Professional Development Day

Saturday, May 19

The Trainee Professional Development Day is an entire day devoted to scientific and career development activities for trainees. The day consists of a keynote address, an activity consisting of one-on-one blitz discussions, and a series of workshops on various topics. The goal of the Trainee Professional Development Day is to allow the next generation of biological rhythm researchers to learn from and interact with faculty members in a more informal and intimate setting than that allowed by the main conference.

Only those who have pre-registered will be allowed to participate. Registered trainees should attend the workshops they selected when registering. This information will be posted on the message board in the conference center prior to the first session.

9:00–9:20 AM **Welcome and Orientation** • *Magnolia A*

Nicolas Cermakian, McGill University

Michael H. Hastings, MRC Laboratory of Molecular Biology

9:20–10:20 AM Keynote Address • *Magnolia A*

Serge Daan, University of Groningen

10:35–11:25 AM **Session 1**

🕐 ***Developing and Maintaining Records of Research Performance + Interview Skills*** • *Azalea I*

Jennifer Loros, Dartmouth Medical School

Knowing how to effectively market yourself is an essential skill for success, whether it is to prospective employers or for fellowship or grant applications. This workshop will cover two related topics: 1) Tactics on making a great impression during a job interview, 2) The importance of creating and maintaining effective records (such as a CV) of your research/academic performance.

Post-Doc Training: Choosing the Right Place and Environment to Achieve Your Goals • *Azalea II*

Steven Brown, University of Zurich, **Valérie Mongrain,** Hôpital du Sacré-Coeur de Montréal, Université de Montréal

This workshop will discuss how to select a research laboratory and the right mentor for postdoctoral training. The importance of temporal aspects, the choice of a good scientific field, and the purpose of postdoctoral training will be addressed. Options of switching research fields (advantages – disadvantages), and doing one vs. two postdocs, will also be presented.

The Transition from Postdoc to Independent Research • *Azalea III*

Maria Canal, University of Manchester, **Joshua Gooley**, Duke-NUS Medical School

This workshop will address the following questions: 1) How to prepare to ensure the smoothest transition possible between postdoc and independent research positions; 2) What are the crucial steps to successfully initiate an independent research program.

🕐 ***Genetic and Molecular Approaches for Rhythms and the Current Theory of Feedback Mechanism*** • *Camellia I*

David Weaver, University of Massachusetts Medical School

This workshop will give an overview of genetic and molecular experimental approaches to study circadian rhythms in animals, including flies and rodents. It will also review the development of the "transcriptional/translational feedback loop" model of molecular clocks and discuss the current form and prospects of this model.

Basics of Chronobiology • *Camellia II*

William Schwartz, University of Massachusetts Medical School

Chronobiology relies on a number of fundamental concepts, many of which are unique in Science. This workshop will provide the basic concepts and terminology of biological rhythms, including the notions of free-running rhythms, entrainment, temperature compensation, output pathways, masking, and so forth.

11:40 AM–12:30 PM **Session 2**

How to Get the Best Out of Your Supervisor and Mentors • *Azalea* I

Michael Antle, University of Calgary, **Carolina Escobar**, Universidad Nacional Autonoma de Mexico

This workshop will discuss the mutual relationships between supervisors/mentors and trainees, including graduate students and postdocs. It will first give an overview of the complex roles, forms and functions of mentoring and their importance in the education and training of science professionals. It will then review the responsibilities of mentors, responsibilities of trainees, and, finally, it will discuss how to deal with problems in the mentor-trainee relationship.

Research Ethics • *Azalea II*

Diane Boivin, McGill University

Ethical conduct is central to conducting successful research, and maintaining happy relations with colleagues. This workshop will focus on ways of minimizing scientific misconduct, and promoting scientific integrity. Topics will include the responsible conduct of research, and the ethical quandaries that can arise in the academic setting, including questions over authorship, and dealing with misconduct by a colleague.

Grantsmanship: Dos and Don'ts in grant writing • *Azalea III*

Eric Bittman, University of Massachusetts Amherst, **Rob Lucas**, University of Manchester

This workshop will discuss the important art of grantsmanship, and the necessary components of successful grant writing, including effective articulation of specific aims, hypotheses, study rationale, and study design. Possible weaknesses of grant proposals from a reviewer's point of view will also be highlighted.

Imaging of Luminescent and Fluorescent Reporter Models • *Camellia I*

David Welsh, University of California at San Diego

Over the past decade, the circadian field has taken advantage of luminescence and fluorescence imaging techniques to follow circadian rhythms in live cells, tissues, and organisms. These imaging techniques have revealed important aspects of clock mechanism and function. This workshop will describe these models and how such technology can be applied to the field of chronobiology.

Circadian Physiological and Behavioral Methods in Flies and Rodents • *Camellia II*

Theresa Lee, University of Tennessee, **Fernanda Ceriani**, Fundación Instituto Leloir

This workshop will describe experimental setups for the monitoring of circadian output in the two most prominent animal model organisms in chronobiology. Different physiological and behavioral readout parameters and underlying protocols will be introduced and discussed.

12:30–1:30 PM **Lunch** • *Magnolia B & C*

1:45–2:45 PM **"Positive feedback looping"** • *Magnolia B & C*

This activity will consist of random one-on-one blitz discussions. Participants are asked to pair randomly and talk for 10 minutes, after which they are asked to pair with another participant, and so on, for one hour. The aim of this activity is to stimulate interaction and exchanges, to allow participants to meet new people, and to "break the ice" before the SRBR conference starts.

3:00–3:50 PM **Session 3**

Developing and Maintaining Records of Research Performance + Interview Skills • *Azalea I*

Jennifer Loros, Dartmouth Medical School

Knowing how to effectively market yourself is an essential skill for success, whether it is to prospective employers or for fellowship or grant applications. This workshop will cover two related topics: 1) Tactics on making a great impression during a job interview, 2) The importance of creating and maintaining effective records (such as a CV) of your research/academic performance.

Work in the Industry and Other Non-Academic Settings as an Alternative Career Path • *Azalea II*

Michael Schwartz, SRI International

This workshop will include an overview of working in the industry following completion of your graduate/postdoc work, and a comparison of research in an industry setting vs. an academic setting. In addition, insights into work in a non-profit research institute will be provided in contrast to industry and academia background.

Making Effective Scientific Presentations • *Azalea III*

Carl Johnson, Vanderbilt University**, Amita Sehgal,** HHMI/Perelman School of Medicine at the University of Pennsylvania

This workshop will cover the critical points to consider when presenting research projects, including: structure and content of the presentation, selection of the material to present, strategies for different target audiences, and appropriate use of technology.

Genetic and Molecular Approaches for Rhythms and the Current Theory of Feedback Mechanism • *Camellia I*

David Weaver, University of Massachusetts Medical School

This workshop will give an overview of genetic and molecular experimental approaches to study circadian rhythms in animals, including flies and rodents. It will also review the development of the "transcriptional/translational feedback loop" model of molecular clocks and discuss the current form and prospects of this model.

Statistical Methods for Time Series Analysis of Rhythms • *Camellia II*

Elizabeth Klerman, Harvard Medical School, **Karen Gamble**, University of Alabama at Birmingham

Analyses of time-series data sets for detection of rhythmicity can be a daunting task. This workshop will cover the various methods, statistical analyses, and related software programs that are available for detecting periodic patterns in biological time-series data, as well as the computational challenges that may arise.

4:05–4:55 PM **Session 4**

The Right Balance between Work and Family • *Azalea I*

Charlotte Förster, Universitaet Wuerzburg, **Christopher Colwell**, University of California, Los Angeles

Achieving a happy balance between academia and family life is a difficult challenge. This workshop will focus on giving trainees helpful advice for balancing their own work and personal goals. The speakers will share their personal experiences and suggestions, followed by discussion with the audience.

Asking the Right Questions in a Biological Rhythms Project • *Azalea II*

Till Roenneberg, University of Munich

… or: "Why performing experiments in constant conditions may be barking up the wrong tree." The importance of critical thinking in designing the right experiments will be discussed. Every experimental design should start with the question "What do I want to find out?" ("What is my hypothesis?"), followed by "What is the best condition to find out what I want to find out?", then "What is the best method to find out what I want to find out?", and finally "Did I think of all the necessary controls?"

How to Set Up and Run a Research Laboratory • *Azalea III*

Karen Gamble, University of Alabama at Birmingham, **Alec Davidson**, Morehouse School of Medicine

Starting a new laboratory poses a wide array of challenges, many of which are new to young investigators. This workshop will provide helpful tips on how to efficiently start a laboratory. Topics covered will include infrastructure, staff recruitment, team management, managing the budget, and lab organization.

🕐 ***Imaging of Luminescent and Fluorescent Reporter Models*** • *Camellia I*

David Welsh, University of California at San Diego

Over the past decade, the circadian field has taken advantage of luminescence and fluorescence imaging techniques to follow circadian rhythms in live cells, tissues, and organisms. These imaging techniques have revealed important aspects of clock mechanism and function. This workshop will describe these models and how such technology can be applied to the field of chronobiology.

Basic Methodology to Study Human Circadian Rhythms • *Camellia II*

Frank A.J. L. Scheer, Brigham and Women's Hospital**,** Harvard Medical School

The field of human chronobiology is continually growing. This workshop is aimed at those new or not familiar with human chronobiology studies, and will provide an overview of the experimental paradigms and techniques currently used to investigate circadian rhythms in humans.

5:00 PM Conclusion of Trainee Professional Development Day

🕐 *Indicates workshops delivered twice*

Junior Faculty Workshops

Saturday, May 19

Attendance is open to investigators within ~8 years of obtaining a faculty position. Professional development workshops for junior faculty are organized for the first time. A panel of experienced members of the field will participate in each meeting, to provide tips and advice to junior faculty members and answer questions. No registration necessary.

3:00–3:50 PM • **Workshop 1** • *Magnolia A*

Leading your Lab: Management, Organization, Personnel

Carolina Escobar, Universidad Nacional Autonoma de Mexico

Theresa Lee, University of Tennessee

Frank A.J.L. Scheer, Brigham and Women's Hospital, Harvard Medical School

William Schwartz, University of Massachusetts Medical School

4:05–4:55 PM • **Workshop 2** • *Magnolia A*

Securing Research Funding: Agencies, Industry, Foundations

Eric Bittman, University of Massachusetts Amherst

Rob Lucas, University of Manchester

Amita Sehgal, HHMI/Perelman School of Medicine at the University of Pennsylvania

Martha Merrow, University of Groningen/University of Munich

SRBR 2012 Program Overview

** *Indicates a Trainee Merit Award Recipient*

Saturday, May 19

9:00 AM–5:00 PM **Trainee Professional Development Day** • *Baytowne Conference Center*

3:00–4:55 PM **Junior Faculty Workshops** • *Magnolia A*

7:00–9:00 PM **Opening Reception** • *Grand Lawn*

Sunday, May 20

8:00–10:00 AM **Poster Session Setup (P1–110)** • *Magnolia A/B/C/D*

8:15–10:30 AM **Symposium 1: *Signal Integration in Circadian Neural Networks*** • *Magnolia E&F*
Chair: **Sato Honma,** Hokkaido University

8:15 Introduction

8:30 ***SCN and Cellular Phenotypes of Circadian Clock Gene Mutations***
David Welsh, University of California, San Diego

9:00 ***SCN Networks***
Elizabeth MaywoodMRC Laboratory of Molecular Biology, Cambridge

9:30 ***Circadian Rhythms in Glial Cell Signaling***
Mark Zoran, Texas A&M University

10:00 ***Synchrony and Synchronization among Pacemakers in Drosophila***
Paul Taghert, Washington University Medical School

Symposium 2: Translational Chronobiology • *Camellia I & II*
Chair: **Francis Levi,** INSERM

8:15 Introduction

8:30 ***Human Circadian and Sleep Duration Phenotypes: From Epidemiological Observations to Mechanisms***
Karla Allebrandt, Ludwig-Maximilians-University of Munich

9:00 ***Genetics and Epigenetics: Determinants of Cellular Circadian Clocks in Health and Disease***
Steven Brown, University of Zurich

9:30 ***Circadian Biomarkers for Personalized Cancer Chronotherapy in Male and Female Patients***
Pasquale Innominato, INSERM

10:00 ***Neurobiological Correlates of Chronotherapeutics in Bipolar Depression***
Francesco Benedetti, Ospedale San Raffaele

Symposium 3: ***The Molecular Clockworks*** • *Azalea I & II*
Chair: **Luis Larrondo,** Pontifica Universidad Catolica de Chile

8:15 Introduction

8:30 ***Initiation and Maintenance of Interlocked Feedback Loops in Drosophila***
Paul Hardin, Texas A&M University

9:00 ***Relationships between Circadian RNA Pol II Transcription and mRNA Accumulation in Mouse Liver Tissue***
Felix Naef, Ecole Polytechique Federale de Lausanne

9:30 ***The Transcription Repressor CSP1 Links the Neurospora Circadian Clock and Metabolism***
Michael Brunner, Heidelberg University

10:00 ***Chemical Biology Reveals Novel Circadian Drug Targets***
Steve Kay, University of California, San Diego

10:30–11:00 AM **Refreshment Break / Exhibits** • *Magnolia Foyer*

Meet the Professors • *Breezeway (between Conference Center & Grand Sandestin)*

Joseph Bass (Genetic approaches to study clocks and metabolism)

Steven Brown (Rodents, humans, peripheral clocks, clock genes)

Carolina Escobar (Rodents, food entrainment, behavior)

Martha Gillette (Rodents, SCN, signaling, coupling peptides)

Sato Honma (Rodents, brain clocks, clock genes, neuronal rhythms)

Jennifer Loros (*Neurospora*, clock genes, output)

Michael Rosbash (*Drosophila*, clock genes, genetics)

Ueli Schibler (Regulation of gene expression, signaling, peripheral clocks)

Charles Weitz (Mammalian clocks, mechanism, physiology)

11:00 AM–12:30 PM **Slide Session A** • *Magnolia E*
Chair: **Alec Davidson,** Morehouse School of Medicine

11:00 ***S1 • The Neural Basis of Circadian Output in the Drosophila Brain***
Ann Marie Macara**,** University of Michigan

11:15 ***S2 • Sodium Leak Channel NARRO ABDOMEN/NALCN is Critical for Setting Resting Membrane Potential and Pacemaker Neuron Activity in Drosophila***
Matthieu Flourakis**,** Northwestern University

11:30 ***S3 • Neuronal Firing is Necessary and Sufficient to Generate Phase Shifts in Drosophila***
Fang Guo**,** Howard Hughes Medical Institute, Brandeis University

11:45 ***S4 • State-Dependent Coupling Mechanisms Regulate Regional Phase Relationships within the Mammalian Pacemaker***
Jennifer Evans, Morehouse School of Medicine

12:00 ***S5 • The SCN Clock Appears Dispensable for the Synchronization of Peripheral Clocks to the Light Dark Cycle***
Jana Husse**, Max Planck Institute for Biophysical Chemistry

12:15 ***S6 • Using Viral Vectors to Track the Circadian Activity of Cyclic AMP/ Ca2+- Responsive Elements and Intracellular Calcium Waves in the Suprachiasmatic Nucleus***
Marco Brancaccio**, MRC Laboratory of Molecular Biology

11:00 AM–12:30 PM **Slide Session B** • *Camellia I & II*
Chair: **Patrick Emery,** University of Massachusetts Medical School

11:00 ***S7 • Selective Circadian Stabilization of Cry Proteins by the Fbxl3 After Hours Protein Defines Distinct Roles for Cry1 and Cry2 in Transcriptional Repression***
Sneha N. Anand**, MRC Laboratory of Molecular Biology

11:15 ***S8 • Identification of Cryptochrome Differentiating Domain Required for Feedback Repression in Circadian Clock Function***
Sanjoy Khan**, The University of Memphis

11:30 ***S9 • Kinetic Relationships between Circadian Transcription and Cytosolic mRNA Accumulation Uncovers Widespread Post-Transcriptional Regulation in the Mammalian Clock***
Laura Symul**, EPFL

11:45 ***S10 • Phosphorylation-Dependent Degradation of CRY2 Regulates Relevant Clock Gene Expression and Generates Normal Oscillation of the Circadian Clock***
Arisa Hirano**, University of Tokyo

12:00 ***S11 • Ataxin2 Controls Circadian Behavior in Drosophila***
Yong Zhang, University of Massachusetts Medical School

12:15 ***S12 • A Novel Factor Linking the Regulation of Pre-mRNA Splicing and Circadian Rhythms in Arabidopsis***
Marcelo Yanovsky, Fundación Instituto Leloir

11:00 AM–12:30 PM **Slide Session C** • *Azalea I & II*
Chair: **Michael Antle,** University of Calgary

11:00 ***S13 • Characterizing the Role of Melanopsin Isoforms using siRNA***
Aarti Jagannath**, University of Oxford

11:15 ***S14 • Identification of an Inducible Repressor Modulating Light Input to the Suprachiasmatic Nuclei***
Stuart Peirson, University of Oxford

11:30 ***S15 • Serotonergic Enhancement of Photic Phase Shifts: BMY7378 Requires Binding in the Median Raphe Nucleus but not in the Suprachiasmatic Nucleus***
Victoria Smith**, University of Calgary

11:45 ***S16 • Circadian Phenotype of Double Mutant PAC1/VPAC2 Receptor Knockout Mice***
Jens Hannibal, Bispebjerg Hospital

12:00 ***S17 • Prevalence of Circadian Rhythm Disorders in 126 Blind Women with and without Light Perception Living in North America***
Erin Flynn-Evans**, Harvard Medical School/Brigham and Women's Hospital

12:15 ***S18 • Functional Connectivity of Entrainment: The Neural Basis of Light Input in the Drosophila Circadian Clock Network***
Katherine R. Lelito**, University of Michigan

11:00 AM–12:30 PM **Slide Session D** • *Magnolia F*
Chair: **Joonho Choe,** Korea Advanced Institute of Science and Technology

11:00 ***S19 • Dopamine Acts Through Cryptochrome to Promote Acute Arousal at Night in Drosophila***
Shailesh Kumar, Howard Hughes Medical Institute/Perelman School of Medicine at the University of Pennsylvania

11:15 ***S20 • Neuroligin 1: A Potential Target of Core Clock Transcription Factors Likely Modulated by Sleep and Wakefulness***
Valérie Mongrain, Hôpital du Sacré-Coeur de Montréal

11:30 ***S21 • Effect of Different Light Regimens for Circadian Entrainment to an 8-Hour Advance of Sleep***
Anne-Marie Chang, Brigham and Women's Hospital/Harvard Medical School

11:45 ***S22 • Disrupted Sleep Impairs Long-Term Memory Consolidation in Rats***
Michael Lee**, Harvard Medical School/Brigham and Women's Hospital

12:00 ***S23 • Assessment of Individual Circadian Phenotypes Using Biopsy Samples- Application to Circadian Rhythm Sleep Disorder Patients***
Akiko Hida, National Center of Neurology and Psychiatry

12:15 ***S24 • Mathematical Modeling Reveals Arousal State Feedback as a Potential Physiological Generator of the Ultradian REM/NREM Sleep Cycle***
Andrew Phillips**, Brigham and Women's Hospital, Harvard Medical School

12:30–4:15 PM **Free Time**

2:00–4:00 PM **Workshop** • *Camellia I & II*
Discrepancies between Circadian Models in the Lab and Field
Discussion Leader: **Serge Daan**
Participants: **Gisele Oda, Noga Kronfeld-Schor, Roelof Hut, Charlotte Helfrich-Förster, Charalambos Kyriacou, Brian Barnes, Kwangwon Lee, Heiko Jansen**

4:15–6:30 PM **Symposium 4: New Discoveries in the TTFL** • *Azalea I & II*
Chair: **Yi Liu,** University of Texas, Southwestern Medical Center

4:15 Introduction

4:30 ***Signaling Within the Mammalian Circadian Timing System***
Ueli Schibler, University of Geneva

5:00 ***New Post-Transcriptional Mechanisms in the Drosophila Circadian Clock***
Ravi Allada, Northwestern University

5:30 ***A Proteomic Approach to Discover New Components in the Animal Circadian Clock***
Joanna Chiu, University of California, Davis

6:00 ***New Components of Transcriptional Regulation in The Plant Clock***
David Somers, Ohio State University/POSTECH

Symposium 5: ***Time to Sleep*** • *Magnolia E & F*
Chair: **Valérie Mongrain,** Hôpital du Sacré-Coeur de Montréal

4:15 Introduction

4:30 ***Peptidergic Regulation of Drosophila Sleep/Wake Patterns***
Michael Nitabach, Yale School of Medicine

5:00 ***Can Clock Circuitry be used to Measure Time-Spent-Awake?***
Paul Franken, University of Lausanne

5:30 ***Circadian Rhythms at Home***
Helen Burgess, Rush University Medical Center

6:00 ***Impact of Sleep Time on Human Physiology***
Diane B. Boivin, McGill University

Symposium 6: Circadian Rhythms in the Wild • *Camellia I & II*
Chair: **Heiko Jansen**, Washington State University

4:15 Introduction

4:30 ***Daily and Annual Rhythms in Free-Living Arctic Ground Squirrels: Real Life in LL and DD***
Brian Barnes, University of Alaska

5:00 ***Tau, Foraging Sequence, Energy Intake, and Torpor: An Individual-Based Field Study in Desert Golden Spiny Mice***
Noga Kronfeld-Schor, Tel Aviv University

5:30 ***Drosophila Circadian Neurons Going Wild***
Charlotte Helfrich-Förster, Würzburg University

6:00 ***The Clockwork Controlling Avian Migration***
Paul Bartell, Pennsylvania State University

7:30–8:30 PM **Data Blitz** • *Magnolia E & F*
Opening Remarks: Michael H. Hastings, MRC Laboratory of Molecular Biology
Chair: **Rebecca Prosser,** University of Tennessee

Circadian Clock Control of Lipid Homeostasis through NAD+ Metabolism
Alison Affinati

Per2 Mutation Increases the Duration and Frequency of Ethanol Drinking and Enhances Cocaine Clock-Resetting Response
Allison Brager

Effects of Circadian Arrhythmia on Reproductive Function in Female Siberian Hamsters
Erin Cable

Functional Analysis of the Ionotropic Glutamate Receptors Involved in Temperature Synchronization in Drosophila
Chenghao Chen

The Neuropeptide VIP is Critical for the Spatiotemporal Pattern of Light-Induced Gene Expression within the Suprachiasmatic Nucleus
Andrew Chiu

Role for the Autonomic Nervous System in The Regulation of the Cardiac Clock
Tamara Cutler

Effects of Hepatic miRNA Depletion on Circadian Gene Expression of Core Clock and Output Genes
Ngoc-Hien Du

Peroxiredoxins are Conserved Markers of Circadian Rhythms
Rachel Edgar

Role of Salt-Inducible Kinase 1 (SIK1) in the Regulation of Circadian Clock Resetting: Indirubin-3′-Monoxime Can Increase the Magnitude of Serum and Light Induced Phase Shifts
Kevin Flanagan

Entrainment by Daily Light Pulses at Random Times in a Subterranean Rodent (Ctenomys aff. knighti)
Danilo E. F. L. Flôres

The Intergeniculate Leaflet (IGL) Shows Differential Responses to Light in Diurnal and Nocturnal Rodents and Contributes to the Display of a Day-Active Profile
Andrew Gall

Bilateral Anterior Agranular Insular Cortex Lesions Increase Anticipatory Activity and Alter Cfos Expression in Food-Restricted Rats
Alex Gavrila

Chronic Cocaine Administration Entrains Locomotor Activity Episodes and Alters Per2 Rhythms in the Arcuate Nucleus
Andrea Gillman

Time in Mitochondrial Activity: from Genes to Function
Amandine Grimm

Reactive Oxygen Species Influence Circadian Timekeeping in Neurospora crassa
Norbert Gyongyosi

Conspecific Vocalizations Serve as a Zeitgeber in the Zebra Finch, Taeniopygia guttata
Clifford Harpole

Waveform Manipulation Markedly Enhances Phase Resetting in Syrian Hamsters
Elizabeth Harrison

Elucidating Genetic and Molecular Networks Underlying Interactions between Sleep and Depression/Anxiety-Related Behaviors in Mice
Peng Jiang

Mapping of a Complex Epistatic Circadian Clock QTL Using Next Generation Sequencing Techniques
Joseph Kawash

A Mechanism for Robust Circadian Timekeeping
Jae Kyoung Kim

Biochemical Analysis of PER/CRY Complexes from Mammalian Tissues
Jinyoung Kim

Circadian Rhythms in Healthspan Supporting Pathways
Joanna Kotwica-Rolinska

Regulation of Food Anticipatory Activity and Photic Signaling in the SCN by Tissue Plasminogen Activator
Jessica Murphy

Spectral and Dynamic Changes in Non-Visual Sensitivity to Light in the Elderly
Raymond Najjar

Molecular Analysis of Circadian Clocks in an Intertidal Crustacean, Talitrus saltator
Joseph O'Grady

Histamine and its Receptor, Hiscl1, Modulate Sleep:Wake Behavior in Drosophila melanogaster
Yangkyun Oh

Molecular Clock Function in Mitochondrial Metabolism
Clara Peek

Blocking PKA Attenuates Photic Phase Shifts in the Early Subjective Night
Tara Pomeroy

Scheduled Exercise Modulates Daily Rhythms of Behavior, Physiology, and Gene Expression in Mice
Analyne M. Schroeder

TIMELESS Integrates Signaling from the PDF Neuropeptide and the CRYPTOCHROME Photoreceptor
Adam Seluzicki

FBXL3 Regulates BMAL1 and REV-Erba Complexes for the Effective Regulation of Circadian Period Determination
Guangsen Shi

Timing of Chronic Intermittent Alcohol Exposure and Withdrawal Differentially Disrupts Circadian Body Temperature and Activity Rhythms In C57Bl/6J Mice
S. Amanda Sinning

The Integration of Two Oscillators: The Dorsomedial Suprachiasmatic Nucleus Times Circadian Expression of Kiss1 and The Luteinizing Hormone Surge
Benjamin Smarr

Demethylation of the Proximal Type III Deiodinase Promoter is Associated with Gonadal Involution in the Seasonally Breeding Siberian Hamster (Phodopus sungorus)
Tyler Stevenson

Disruption of Circadian Organization in Mice Augments Alcohol-Induced Gut Leakiness and Liver Pathology
Keith Summa

Splitting of Circadian Rhythms Of Body Temperature and Locomotor Activity in the Tuco-Tuco (Ctenomys Aff. Knighti), A South-American Subterranean Rodent
Patricia Tachinardi

Analysis of Functional Connectivity within the Circadian Clock Neuron Network of Drosophila
Zepang Yao

Timed Food Signals Employ Pkcγ to Regulate BMAL1 and Daily Timing
Luoying Zhang

Targeted Disruption of the Inhibitor of DNA Binding 2 (Id2) Gene Results in a Circadian Clock and Metabolic Phenotype
Peng Zhou

Metabolic Alterations in Csnk1e Mutant Mice
Lili Zhou

Non-optimal gene codon usage is important for the expression, structure and function of the circadian clock protein FREQUENCY
Mian Zhou

8:30–10:30 PM **Poster Session I (P1-P110)** • *Magnolia A/B/C/D*

Monday, May 21

8:00–10:00 AM **Poster Session Setup (P111–P221)** • *Magnolia A/B/C/D*

8:15–10:30 AM **Symposium 7: *Circadian Output Mechanisms and Networks*** • *Magnolia E & F*
Chair: **Jennifer Loros**, Dartmouth Medical School

8:15 Introduction

8:30 ***Towards a Metabolic Map of Mouse (Circadian) Time and Space***
John Hogenesch, University of Pennsylvania

9:00 ***Circadian Network of Bmal1***
Toru Takumi, Hiroshima University

9:30 ***Dissection of Light and Circadian Output Pathways Using ChIPseq and RNAseq***
Jay Dunlap, Dartmouth Medical School

10:00 ***REVEILLE Transcription Factors are Required for Clock Function and Growth Control***
Stacey Harmer, University of California, Davis

Symposium 8: *Integration between the Circadian Clock and Metabolism* •
Azalea I & II
Chair: **Akhilesh Reddy**, University of Cambridge

8:15 Introduction

8:30 ***Rhythms, Sleep and Metabolism in Drosophila***
Amita Seghal, HHMI/ Perelman School of Medicine, University of Pennsylvania

9:00 ***Post-Transcriptional Circadian Control of Liver Metabolism***
Carla Green, University of Texas Southwestern Medical Center

9:30 ***Regulation of Liver Metabolism by Circadian Clock-Coordinated Post-Transcriptional Modifications***
Frédéric Gachon, University of Lusanne

10:00 ***Molecular and Endocrine Rhythms in Men with Type two Diabetes***
Jonathan Johnston, University of Surrey

Symposium 9: ***Cross-talk Between the Circadian Clock and the Immune System***
• *Camellia I & II*
Chair: **Nicolas Cermakian**, McGill University

8:15 Introduction

8:30 ***Immune Challenges Reset the Circadian Clock: A Tale of Bidirectional Communication***
Diego Golombek, National University of Quilmes

9:00 ***Opposing Rhythms in Human Immune Functions***
Tanja Lange, University of Lübeck

9:30 ***Circadian Regulation of Natural Killer Cell Functions***
Dipak Sarkar, Rutgers University

10:00 ***Role of the Circadian Clock in Immediate- and Delayed-Type Skin Allergic Reaction in Mice***
Shigenobu Shibata, Waseda University

10:30–11:00 AM **Refreshment Break / Exhibits** • *Magnolia Foyer*

Meet the Professors • *Breezeway (between Conference Center & Grand Sandestin)*

Michael Brunner (*Neurospora*, molecular mechanisms)

Charles Czeisler (Humans, sleep and circadian rhythms)

Carla Green (Rodents, clock output, metabolism, post-transcriptional)

Carl Johnson (Cyanobacteria, mammals, clock genes)

Francis Lévi (Cancer chronobiology and chronotherapy)

Martha Merrow (Entrainment and rhythms in humans and Neurospora)

Amita Sehgal (*Drosophila*, clock genes, sleep)

David Weaver (Rodents, molecular mechanisms)

David Welsh (Single cells, SCN, neuronal circuits, rodents)

11:00 AM–12:30 PM **Slide Session E** • *Magnolia E*
Chair: **Beverley Rothermel,** University of Texas Southwestern Medical Center

11:00 ***S25 • Small Molecule Probes of the Circadian Clock and Output Functions***
Zheng (Jake) Chen, University of Texas Health Science Center at Houston

11:15 ***S26 • Identification of a Small Molecule Targeting Cryptochrome***
Tsuyoshi Hirota, University of California, San Diego

11:30 ***S27 • Regulator of Calcineurin 1 (Rcan1) Confers Time-Of-Day Protection to the Heart from Ischemia/Reperfusion Damage***
David Rotter,** University of Texas Southwestern Medical Center

11:45 ***S28 • Circadian Influence on CYP3A4-Mediated Drug Metabolism is Dependent on Route of Administration***
Laura Kervezee, Centre for Human Drug Research

12:00 ***S29 • Repeated Melatonin Supplementation Improves Sleep in Hypertensive Patients Treated with β-Blockers***
Frank A.J.L. Scheer, Harvard Medical School, Brigham and Women's Hospital

12:15 ***S30 • Molecular Biomarkers for Human Circadian Difference***
Ludmilla Cuninkova**,** University of Zurich

11:00 AM–12:30 PM **Slide Session F •** *Magnolia F*
Chair: **Jason Debruyne,** Morehouse School of Medicine

11:00 ***S31 • CATP is a Critical Clock Component that Modulates the Chromatin Structure of the Frequency Gene***
Joonseok Cha, University of Texas Southwestern Medical Center

11:15 ***S32 • Nascent-Seq Reveals Dynamic and Unexpected Features of Mouse Circadian Transcription***
Jerome Menet, HHMI, Brandeis University

11:30 ***S33 • The Role of MicroRNAs as Cis- and Trans-Acting Regulators of the Clock Gene Bmal1 in the SCN and Periphery***
Vikram Shende**,** Texas A&M University

11:45 ***S34 • Histone Lysine Demethylase JARID1a Activates CLOCK-BMAL1 and Influences the Circadian Clock***
Luciano DiTacchio, Salk Institute for Biological Studies

12:00 ***S35 • Sirt2, a Novel Cryptochrome Binding Partner, Modulates Circadian Period Length through Deacetylation of the CRY Proteins***
Ines Chaves, Erasmus University Medical Center

12:15 ***S36 • The Role of the Deubiquitinating Enzyme USP2 in Circadian Rhythms and Behaviour***
Katarina Stojkovic**,** Douglas Mental Health University Institute, McGill University

11:00 AM–12:30 PM **Slide Session G •** *Azalea I & II*
Chair: **Martha Gillette,** University of Illinois at Urbana-Champaign

11:00 ***S37 • Regulation of the Circadian Clock by O-GlcNAc Signaling***
Mindian Li**,** Yale University School of Medicine

11:15 ***S38 • Minimal Design of a Reversible Dual Phosphorylation Oscillator***
Koji Ode**,** RIKEN, Quantitative Biology Center

11:30 ***S39 • The Circadian Clock Regulates Cellular Redox Homeostasis through NRF2-Mediated Antioxidant Pathway***
Vanja Pekovic-Vaughan, University of Manchester

11:45 ***S40 • Circadian Rhythm of Redox State Non-Transcriptionally Regulates Excitability in Suprachiasmatic Nucleus Neurons***
Tongfei Wang**,** University of Illinois at Urbana-Champaign

12:00 ***S41 • Regulation of Labile Phosphorylation of the Clock Protein KaiC in Circadian Function***
Yao Xu, Vanderbilt University

12:15 ***S42 • Robustness and Sensitivity in the Cyanobacteria Circadian Oscillator***
Connie Phong, Institute for Genomics and Systems Biology, University of Chicago

11:00 AM–12:30 PM **Slide Session H** • *Camellia I & II*
Chair: **Patrick Nolan**, MRC Harwell

11:00 ***S43 • Role of the two Histamine Receptors in Light Entrainment of the Drosophila Circadian Clock***
François Rouyer, Institut de Neurobiologie Alfred Fessard, CNRS

11:15 ***S44 • A Mechanism for Aschoff's Rule: Effector Binding to a Co-Repressor Complex Sustains the Plant Circadian Oscillator as a Light-Responsive Process***
Seth Davis, Max Planck Institute for Plant Breeding Research

11:30 ***S45 • Light-Entrainment of the Central Circadian Clock in Zebrafish: A Transcriptiome Analysis***
Zohar Ben-Moshe, Tel-Aviv University

11:45 ***S46 • The Short Circuit Sci Mutant Expresses a Compound Circadian Phenotype Including Short Free-Running Period in Constant Darkness and Increased Retinal Sensitivity***
Jessica Edwards**,** MRC Harwell, Harwell Science and Innovation Campus, Oxfordshire

12:00 ***S47 • The Search for the Deep Brain Photoreceptive Molecules Regulating Photoperiodism***
Yusuke Nakane*,* Nagoya University, Graduate School of Bio Agricultural Sciences

12:15 ***S48 • Apoptosis Regulates ipRCG Spacing and Rod-Cone Signaling for Circadian Photoentrainment***
Samer Hattar, Johns Hopkins University

12:30–4:30 PM **Free Time**

1:00–2:00PM **Editors Meeting, SAGE Publishers** • *Jasmine*

3:00–4:00 PM **Discussion on NHLBI Funding** • *Camellia I & II*
Aaron D. Laposky, National Center on Sleep Disorders Research, NHLBI/Division of Lung Diseases

4:30–6:30 PM **Presidential Special Symposium: *Time, Sleep, Memory*** • Azalea Ballroom
Chair: **Michael H. Hastings**, MRC Laboratory of Molecular Biology

Colorful Clock
Steven M. Reppert, University of Massachusetts Medical School

Interactions between Sleep and Circadian Rhythms in Learning and Memory
H. Craig Heller, Stanford University

Hippocampal Memory Reactivation during Sleep
Matthew Wilson, Massachusetts Institute of Technology

8:00–10:30 PM **Poster Session II (P111–221)** • *Magnolia A/B/C/D*

Tuesday, May 22

8:00–10:00 AM **Poster Session Setup (P222–P315)** • *Magnolia A/B/C/D*

8:15–10:30 AM **Symposium 10: *Entrainment and Masking: Function and Mechanisms*** • *Camellia I & II*
Chair: **Martha Merrow,** University of Groningen/University of Munich

8:15 Introduction

8:30 ***Keeping Time (or NOT!) Under Stress***
Carl Johnson, Vanderbilt University

9:00 ***Less is More, Translational Control the Neurospora Clock***
Yi Liu, University of Texas, Southwestern Medical Center

9:30 ***Clocks in an Intertidal Crustacean***
Charalambos Kyriacou, University of Leicester

10:00 ***The Messiness of Circadian Markers: Phase, Entrainment and Masking***
Elizabeth Klerman, Brigham and Women's Hospital/Harvard Medical School

Symposium 11: *Posttranslational Oscillators* • *Azalea I & II*
Chair: **Susan Golden**, University of California, San Diego

8:15 Introduction

8:30 ***It Takes Two Rings to Oscillate: Rhythmic Ring-Ring Stacking Tells Time in the Clock***
Andy LiWang, University of California, Merced

9:00 ***Cryptochromes Rhythmically Repress the Glucocorticoid Receptor***
Katja Lamia, The Scripps Research Institute

9:30 ***Circadian Rhythms in Metabolism: Cause or Effect?***
John O'Neill, University of Cambridge

10:00 ***Novel Components of the Non-Transcriptional Oscillator***
Gerben van Ooijen, University of Edinburgh

Symposium 12: *Circadian Rhythms and Disease* • *Magnolia E & F*
Chair: **Marina Antoch**, Roswell Park Cancer Institute

8:15 Introduction

8:30 ***Cardiovascular Consequences of Circadian Clock Dysfunction***
R. Daniel Rudic, Georgia Health Sciences University

9:00 ***Circadian Dysfunction in Aging and Neurodegeneration***
Christopher Colwell, UCLA Medical School

9:30 ***Circadian Clock and Osteoporosis***
Roman Kondratov, Cleveland State University

10:00 ***Circadian Rhythms, Clock Genes and Addiction***
Stephanie Perreau-Lenz, Central Institute of Mental Health

10:30–11:00 **Refreshment Break / Exhibits** • *Magnolia Foyer*

Meet the Professors • *Breezeway (between Conference Center & Grand Sandestin)*

Derk-Jan Dijk (Humans, sleep and circadian rhythms)

Jay Dunlap (*Neurospora*, circadian output, transcriptional regulation)

Michael H. Hastings (Rodents, SCN, molecular mechanisms)

John Hogenesch (Systems biology, clock-controlled genes)

Colleen McClung (Rodents, clock genes, psychiatry)

Michael Menaker (Rodents, central and peripheral clocks)

Till Roenneberg (Human chronotypes, entrainment, *Neurospora*)

Joseph Takahashi (Mouse genetics, clock genes)

Kenneth Wright (Humans, sleep and circadian rhythms)

11:00AM–12:30 PM **Slide Session I** • *Azalea I & II*
Chair: **Justin Blau**, New York University

11:00 ***S49 • Circadian Regulation of Translation through the Conserved Serine/Threonine Protein Kinase RCK-2 in Neurospora crassa***
Stephen Caster**, Texas A&M University

11:15 ***S50 • Protein Binding Microarrays and Real-Time Reporter Studies: Building a four-dimensional understanding of transcriptional networks in Neurospora crassa***
Luis Larrondo, Pontificia Universidad Catolica de Chile

11:30 ***S51 • The LHY Transcription Factor Couples Abscisic Acid Signaling to the Arabidopsis Circadian Clock***
Isabelle Carre, University of Warwick

11:45 ***S52 • Clk mRNA Turnover de-Noises Circadian Transcription and Behavior***
Sebastian Kadener, Silberman Institute of Life Sciences, The Hebrew University of Jerusalem

12:00 ***S53 • A Novel Clock-Regulated RhoGEF Links the Core Clock to Output Pathways***
Afroditi Petsakou**, New York University

12:15 ***S54 • Core Circadian Protein CLOCK is a Co-Activator of NF-kB Mediated Transcription***
Marina Antoch, Roswell Park Cancer Institute

11:00AM–12:30 PM **Slide Session J** • *Magnolia E*
Chair: **Colleen McClung**, University of Pittsburg

11:00 ***S55 • Novel Human Mutations for Familial Advanced Sleep Phase Syndrome***
Angela Huang, University of California, San Francisco

11:15 ***S56 • Regulation of Tyrosine Hydroxylase by CLOCK: Potential Mechanisms Underlying the Circadian Control of Dopamine and Reward***
Trey Williams**, University of Pittsburgh School of Medicine

11:30 ***S57 • Circadian Basis of Cocaine Addiction and Relapse***
Adam Stowie**, Kent State University

11:45 ***S58 • Elucidating the Role of Circadian Rhythm Disruption in Transformation and Lung Tumorigenesis***
Thales Papagiannakopoulos**, Massachusetts Institute of Technology

12:00 ***S59 • Circadian Rhythms and SAD: Novel Response of Brain and Behavior to Changing Day-Lengths in the Diurnal Grass Rat (Arvicanthis niloticus)***
Lily Yan, Michigan State University

12:15 ***S60 • Circadian Variation of the Response of T Cells to Antigen***
Erin Fortier**, McGill University

11:00AM–12:30 PM **Slide Session K** • *Magnolia F*
Chair: **Giles Duffield**, University of Notre Dame

11:00 ***S61 • Molecular and Behavioural Analysis of Circadian Rhythms in the Subterranean Nematode Caenorhabditis elegans***
Maria Olmedo, University of Munich

11:15 ***S62 • Circadian Entrainment by Light and Host in the Haematophagous Chagas Vector, Triatoma infestans***
Martin Ralph, University of Toronto

11:30 ***S63 • Genome-Wide Profiling of Circadian and Light-Regulated Gene Expression of the Anopheles***
Samuel Rund**, University of Notre Dame

11:45 ***S64 • Photoperiodic Flowering and Floral Reversion in Impatiens balsamina***
Laura Roden, University of Cape Town

12:00 ***S65 • Female Gonadotrope-Specific Bmal1 Knockout Mice Exhibit Elevated Luteinizing Hormone Levels and Lengthened Estrous Cycles but are Otherwise Reproductively Normal***
Adrienne Chu**, McGill University

12:15 ***S66 • Sex Differences in Seasonal Timing of the Circadian Clock in Humans***
Sean Cain, Harvard Medical School, Brigham and Women's Hospital

11:00AM–12:30 PM **Slide Session L** • *Camellia I & II*
Chair: **Henrich Oster**, University of Lübeck

11:00 ***S67 • The Suprachiasmatic Nucleus is Target for Metabolic and Cardiovascular Information***
Ruud Buijs, Instituto de Investigaciones Biomedicas

11:15 ***S68 • The Role of Adipose Tissue Clocks in Metabolic Homeostasis***
Anton Shostak****,** Max Planck Institute for Biophysical Chemistry

11:30 ***S69 • Role of Dietary Fat Composition in Circadian Behavior and SCN Function***
Eleonore Maury****,** Feinberg School of Medicine, Northwestern University

11:45 ***S70 • Clock Control of Mitochondrial Metabolism and Vice Versa***
Karen Schmitt****,** Universitäre Psychiatrische Kliniken Basel

12:00 ***S71 • PET Assessed 18F-Fluorodeoxyglucose Uptake in Brain, Heart, and Brown Adipose Tissue: Revealing Links between Circadian Rhythms and Metabolism***
Daan Van Der Veen, University of Notre Dame

12:15 ***S72 • SCN Modulates both Hepatic Glucose Production and Peripheral Glucose Uptake: A Role for Orexin?***
Andries Kalsbeek, Academic Medical Center (AMC), University of Amsterdam

12:30–4:15 PM **Free Time**

2:00–4:00 PM **SRBR Executive Committee Meeting** • *Jasmine*

4:15–6:30 PM **Symposium 13: *Circadian Chromatin Remodeling*** • *Azalea I & II*
Chair: **C. Robertson McClung**, Dartmouth College

4:15 Introduction

4:30 ***Linking Circadian Metabolism to Chromatin Control***
Paolo Sassone-Corsi, University of California, Irvine

5:00 ***Negative Feedback Functions of the Mammalian PERIOD Complex***
Charles Weitz, Harvard Medical School

5:30 ***Chromatin Remodeling and the Arabidopsis Circadian Clock***
Paloma Mas, Center for Research in Agricultural Genomics (CRAG)

6:00 ***Chromatin Remodeling Assists Circadian Clock-Regulated Gene Expression***
William Belden, Rutgers

Symposium 14: *Circadian Organization and Peripheral Oscillators* •
Camellia I & II
Chair: **Anne Eckert**, University of Basel

4:15 Introduction

4:30 ***Central and Peripheral Regulation of Behavior and Visceral Function***
Vincent Cassone, University of Kentucky

5:00 ***The Circadian Orchestra***
Michael Menaker, University of Virginia

5:30 ***Beyond Non-Canonical Rhythmicity: Period Determination in the Food-Entrainable and Methamphetamine-Sensitive Circadian Oscillator(s)***
Shin Yamazaki, Vanderbilt University

6:00 ***Circadian Clocks and Photoreception, Lessons from Fish***
Nicholas Foulkes, Max Plank Institute

Symposium 15: ***The Circadian Clock in Fitness and Aging*** • *Magnolia E & F*
Chair: Jadwiga Giebultowicz, Oregon State University

4:15 Introduction

4:30 ***Modulation of Sleep and Activity through Gustatory Perception of Nutritional Quality***
Scott Pletcher, University of Michigan Medical School

5:00 ***The Circadian Clock in Skeletal Muscle Health***
Karyn Esser, University of Kentucky

5:30 ***Alterations to the Circadian System in Early Alzheimer's Disease***
Roxanne Sterniczuk, Dalhousie University

6:00 ***Circadian Rhythmicity in Healthy Older Humans***
Jeanne Duffy, Brigham and Women's Hospital, Harvard Medical School

8:00–10:30 PM **Poster Session III (P222–315)** • *Magnolia A/B/C/D*

Wednesday, May 23

8:15-10:30 AM **Symposium 16:** ***The Importance of Being Entrained*** • *Azalea I & II*
Chair: **Satchin Panda**, Salk Institute

8:15 Introduction

8:30 ***Riding the Circadian Waveform for Extraordinary Entrainment***
Michael Gorman, University of California, San Diego

9:00 ***Signal Transduction Pathway Regulating Seasonality in Vertebrates***
Takashi Yoshimura, Nagoya University

9:30 ***What the Retina Tells the Hypothalamus***
Robert Lucas, University of Manchester

10:00 ***Cellular Redox as a Zeitgeber for the Cyanobacterial Clock***
Susan Golden, University of California, San Diego

Symposium 17: ***From Computer to Bench*** • *Camellia I & II*
Chair: **Danny Forger**, University of Michigan

8:15 Introduction

8:30 ***Circadian Rhythms in Neurospora crassa in-Silico and in-Vivo***
Christian Hong, University of Cincinnati College of Medicine, **Attila Csikasz-Nagy**, University of Trento

9:00 ***Entrainment of Mammalian Circadian Oscillators***
Achim Kramer, **Hanspeter Herzel,** University of Berlin

9:30 ***Systems and Synthetic Biology of Mammalian Circadian Clocks***
Hiroki Ueda, **Rikuhiro Yamada**, RIKEN

10:00 ***Effects of Photoperiods on the Electrical Properties of Suprachiasmatic Nucleus Per1 Neurons***
Mino Belle, University of Manchester, **Casey Diekman,** Mathematical Biosciences Institute

Symposium 18: ***New Developments in Cognitive Chronobiology*** • *Magnolia E&F*
Chair: **Katherine Sharkey**, Brown University

8:15 Introduction

8:30 ***Sleep Loss and the Circadian Rescue and Neglect of Performance across Cognitive Domains***
Derk-Jan Dijk, University of Surrey

9:00 ***Modulation of Cognitive Responses by Wake/Sleep Regulation***
Pierre Maquet, University of Liege

9:30 ***Effects of Light on Human Alertness and Cognition***
Christian Cajochen, University of Basel

10:00 ***Disentangling the Influence of Sleep Inertia, Sleep Homeostatic, and Circadian Rhythms on Cognitive Functioning***
Kenneth Wright, University of Colorado

10:30–11:00 AM **Refreshment Break / Exhibits** • *Magnolia Foyer*

Meet the Professors • *Breezeway (between Conference Center & Grand Sandestin)*

Deborah Bell-Pedersen (*Neurospora*, output pathways, oscillator complexity)

Isaac Edery (*Drosophila*, clock genes, post-translational)

Susan Golden (Cyanobacteria, molecular mechanisms)

Elizabeth Klerman (Humans, sleep and circadian rhythms, modeling)

Robert Lucas (Mammals, photic input pathways)

Hugh Piggins (Rodents, SCN, electrophysiology, neuropeptides)

Akhilesh Reddy (Mammals, circadian rhythms and metabolism)

Paolo Sassone-Corsi (Rodent, clock genes, post-translational)

11:00 AM–12:45 PM **Slide Session M** • *Magnolia E*
Chair: **Doug McMahon**, Vanderbilt University

11:00 ***S73 • Circadian Clock Gene Expression is Linked to Daily Changes in Spontaneous Firing Rate***
Jeff Jones**, Vanderbilt University

11:15 ***S74 • Probing for Pacemaker Cells in the Mouse Suprachiasmatic Nucleus by Conditional Manipulation of Cellular Circadian Period***
Nicola Smyllie**, MRC Laboratory of Molecular Biology

11:30 ***S75 • In Vivo Monitoring of Multi-Unit Neural Activity Reveals Robust SCN Rhythms in Period1–/– Mice***
Wataru Nakamura, Osaka University Graduate School of Dentistry

11:45 ***S76 • In Vivo Monitoring of Peripheral Circadian Clocks in the Mouse***
Yu Tahara**, Waseda University

12:00 ***S77 • The Role of Lhx1 in SCN Development and Function***
Joseph Bedont**, Johns Hopkins Medical Institute

12:15 ***S78 • Synchronization within a Clock Circuit Reduces Noise***
Ben Collins, New York University

12:30 ***S79 • Positional cloning and characterization of the circadian mutant past-time***
Seung-Hee Yoo, University of Texas Southwestern Medical Center

11:00 AM–12:30 PM **Slide Session N** • *Azalea I & II*
Chair: **Cheng Chi Lee**, University of Texas, Medical School

11:00 ***S80 • Carbon Monoxide-a Volatile Lube in the Mammalian Molecular Clockwork***
Roman Klemz**, Charite-Universitaetsmedizin Berlin

11:15 ***S81 • PML Regulates PER2 Nuclear Localization and Circadian Function***
Takao Miki, University of Texas Health Science Center

11:30 ***S82 • Deep Sequencing of the Circadian and Diurnal Transcriptome of Drosophila Brain***
Michael Hughes, Yale School of Medicine

11:45 ***S83 • Biochemical Analysis of PER/CRY Complexes from Mammalian Tissues***
Hao A. Duong, Harvard Medical School

12:00 ***S84 • Functionally Complete Excision of Floxed Alleles in the Mouse Suprachiasmatic Nucleus by Vgat-ires-Cre***
David Weaver, University of Massachusetts Medical School

12:15 ***S85 • ES Cell-Based Evaluation System of Circadian Phenotypes in Mammals***
Kazuhiro Yagita, Kyoto Prefectural University of Medicine

11:00 AM–12:30 PM **Slide Session O** • *Camellia I & II*
Chair: **Carolina Escobar**, Fac Medicine UNAM

11:00 ***S86 • Time-Restricted Feeding Improves Metabolic Cycle and Prevents Metabolic Diseases in Mice Fed a High-Fat Diet***
Megumi Hatori, Salk Institute for Biological Studies

11:15 ***S87 • The Human Circadian Metabolome***
Robert Dallmann, Institute of Pharmacology and Toxicology, University of Zurich

11:30 ***S88 • Loss of the Circadian Deadenylase Nocturnin Results in Insulin Resistance***
Jeremy Stubblefield**, University of Texas Southwestern Medical Center

11:45 ***S89 • Rev-erbα and Per2 Direct Adaptive Metabolic and Thermogenic Responses to Feeding Cycles***
David Bechtold, University of Manchester

12:00 ***S90 • FGF21 Alters Circadian Behavior and Metabolism via the Nervous System***
Angie Bookout**, University of Texas Southwestern Medical Center

12:15 ***S91 • Identification of Human Plasma Metabolites Exhibit Time-of-Day Variation using Untargeted Liquid Chromatography-Mass Spectrometry Metabolomics Approach***
Debra Skene, University of Surrey

11:00 AM–12:30 PM **Slide Session P** • *Magnolia F*
Chair: **Samer Hattar**, Johns Hopkins University

11:00 ***S92 • Millisecond Light Flashes Phase Shift the Human Circadian Pacemaker during Sleep without Disrupting Sleep***
Jamie Zeitzer, Stanford University

11:15 ***S93 • Cognition-Induced Circadian Entrainment Requires Multiple Oscillators Signaled by Basal Forebrain Cholinergic Mechanisms***
Howard Gritton, University of Tennessee

11:30 ***S94 • Aberrant Light Exposure Impairs Mood and Learning through Melanopsin-Expressing Neurons***
Tara LeGates****,** Johns Hopkins University

11:45 ***S95 • Ultraviolet Light Provides a Major Input to the Circadian System in Mice***
Hester van Diepen****,** Leiden University Medical Center

12:00 ***S956 • The Intergeniculate Leaflet is Necessary for Serotonergic Potentiation of Photic Phase Shifts***
Ryan Jeffers****,** University of Calgary

12:15 ***S967 • Aging Affects the Impact of Light on Non-Visual Cognitive Brain Responses but not Pupillary Constriction***
Véronique Daneault****,** University of Montreal Geriatric Institute

12:30–4:00 PM **Free Time**

2:00–4:00 PM **Workshop** • *Camellia I & II*
SCN Architecture
Discussion Leader: **Robert Moore**
Participants: **Charles Allen, Chris Colwell, Ruud Buijs, Elizabeth Maywood, Martha Gillette, Erik Herzog, Michael Antle, Lily Yan, Sato Honma, Shin Yamazuki, David Welsh**

4:00–5:00 PM **Business Meeting** • *Azalea Ballroom*

5:30–6:30 PM **Pittendrigh/Aschoff Lecture** • *Azalea Ballroom*
Introduction: **Fred Turek,** Northwestern University
Presentation: **Joseph Takahashi**, University of Texas Southwestern Medical Center

7:00–8:00 PM **Cocktail Reception** (cash bar) • *Magnolia Foyer*

8:00–11:00 PM **Closing Banquet** • *Magnolia Ballroom*

Poster Titles

P1 **Do the Peripheral Clocks Function in *Spodoptera littoralis* Larvae?** • Joanna Kotwica-Rolinska, Faculty of Biology, University of Warsaw

P2 **Enhanced Entrainment of Circadian Rhythms to Food in Juvenile Siberian Hamsters** • Sean Bradley, University Of Chicago

P3 **A Mechanism for Robust Circadian Timekeeping** • Jae Kyoung Kim, University Of Michigan

P4 **Increased Fat Mass Per Se Does Not Alter Gene Expression Rhythms in Rat White Adipose Tissue** • Rianne Van Der Spek, Academic Medical Center-University of Amsterdam (AMC-Uva)

P5 **Natural Variation in Cryptochrome in Wild Populations of Drosophila** • Eran Tauber, University Of Leicester

P6 **Visualising the Intra-Cellular Behaviour of Per2 Protein across Circadian Time Using a Novel Knock-In Mutant Mouse Encoding a Per2::VENUS Fusion Protein** • Nicola Smyllie, MRC Laboratory of Molecular Biology

P7 **Running against One's Clock: Chronotype and the PER3 VNTR Polymorphism in Athletes** • Laura Roden, University of Cape Town

P8 **Dyschronic, a Drosophila Homolog of a Deaf-Blindness Gene, Regulates Circadian Output and Slowpoke Channels** • Kyunghee Koh, Thomas Jefferson University

P9 **Patterns of c-Fos Expression in the Lateral Habenula and Their Relation to Locomotion and Circadian Phase in the Diurnal Grass Rat** • Alexandra Castillo-Ruiz, University of Massachusetts Medical School

P10 **The Impact of Blue and Red Lights on Objective and Subjective Alertness in the Afternoon** • Mariana Figueiro, Rensselaer Polytechnic Institute

P11 **The Purple Non-Sulfur Bacterium Rhodopseudomonas palustris Strain TIE-1 Displays Circadian Clock Properties upon Oxygen Entrainment** • Peijun Ma, Vanderbilt University

P12 **A Role for O-GlcNAcylation in Setting Circadian Clock Speed** • Eun Young Kim, Ajou University School of Medicine

P13 **Calcium-Dependent Ion Channels Involved in the Generation of Spontaneous Activity in Circadian Pacemaker Neurons of the Cockroach *Leucophaea maderae*** • Monika Stengl, University of Kassel

P14 **Effects of Postnatal Light Experience on Photic Information Processing within the Circadian System** • Maria Canal, University of Manchester

P15 **The Circadian Clock Gene Bmal1 Regulates Stress Axis Activity in Mice** • Alexei Leliavski, Max Planck Institute for Biophysical Chemistry

P16 **Atherosclerotic Risk and Social Jetlag in Rotating Shift-Workers: First Evidence from a Pilot Study** • Thomas Kantermann, Universitatsmedizin, Berlin

P17 **PREMD: A New Analytical Technique for Assessment of Complex and Dynamic Biological Rhythms** • Men-Tzung Lo, National Central University

P18 **Per2 Mutation Increases the Duration and Frequency of Ethanol Drinking and Enhances Cocaine Clock-Resetting Response** • Allison Brager, Kent State University

P19 **A Novel Enhancer Element is Important for Bmal1 Circadian Expression in Muscle Cells** • Xiping Zhang, University of Kentucky

P20 **Effects of Hepatic miRNA Depletion on Circadian Gene Expression of Core Clock and Output Genes** • Ngoc-Hien Du, Center for Integrative Genomics, University of Lausanne

P21 **Association between rs1801260 of the Circadian Gene CLOCK and Lipid and Glucose Metabolism in Women with Polycystic Ovary Syndrome** • Eleanor Scott, University of Leeds — WITHDRAWN

P22 **Aging of the Circadian Clock from Cell to Network** • Sahar Farajnia, Leiden University Mecical Center

P23 **Polycystic Ovarian Syndrome (PCOS) Induced by Pubertal Androgen Exposure Disrupts the Timing of the Circadian System** • Michael Sellix, University of Rochester School of Medicine

P24 **Strain and Sex-Specific Differences in Dusk-Related Flight Activity and the Circadian Clock of *Anopheles gambiae* Mosquitoes** • Samuel Lee, University of Notre Dame

P25 **Critical Roles for A-Type K+ Currents (IA) in the Regulation of Circadian Locomotor Behavior and Neuronal Firing in the Suprachiasmatic Nucleus** • Daniel Granados-Fuentes, Washington University

P26 **Melanopsin Ganglion Cells can Signal Irradiance Continuously for Ten Hours** • Kwoon Wong, University of Michigan

P27 **Inhibition of αENaC Expression and ENaC Activity Following Blockade of the Circadian Clock-Regulatory Kinases CKIδ/ε** • Jacob Richards, University of Florida

P28 **The Circadian Thermo-Energetics Hypothesis: An Evolutionary Explanation for Temporal Niche Switching and Shift Work Obesity** • Roelof A. Hut, University of Groningen

P29 **Acetylcholine Participates in Non-Photic Phase Shifting of the Circadian Clock** • Glenn Yamakawa, University of Calgary

P30 **PDF Receptor-Expressing Cells in the Ellipsoid Body: A Link between Locomotor and Sleep Circuits?** • Leslie C. Griffith, Brandeis University

P31 **Blue Light from Light-Emitting Diodes Directed at a Single Eye Elicits a Dose- Dependent Suppression of Melatonin in Horses** • Barbara A Murphy, University College Dublin

P32 **A Cell Autonomous Circadian-Enzymatic Model Elucidates the Effects of SIRT1 on Circadian Amplitude** • Panagiota Foteinou, University of California, Santa Barbara

P33 **Differential Expression of Melanopsin Isoforms Opn4L and Opn4S during Postnatal Development of the Mouse Retina** • Steven Hughes, University of Oxford

P34 **The Collective Period of Delay-Coupled Gene Regulatory Oscillators, with Application to the Vertebrate Segmentation Clock** • Yongqiang Wang, University of California at Santa Barbara

P35 **Molecular and Physiological Characteristics of Delayed Sleep Phase Disorder** • Alina Patke, The Rockefeller University

P36 **Multiple Daily Meals: Effects on Behavior, Peripheral Oscillators and Associated Hormones** • Danica Patton, Simon Fraser University

P37 **Substitution of Fish Oil Containing Omega-3 Fatty Acid Augments Restricted Feeding-Induced Entrainment of the Liver Clock through GPR120 Activation in PER2::LUCIFERASE Mouse** • Akiko Hirao, Waseda University

P38 **Genetic Polymorphisms in PER3, BMAL2 and FBXL3 are Associated with Diurnal Preference in the G1219 British Longitudinal Population Sample** • Michael J. Parsons, Harwell Science and Innovation Campus

P39 **The Circadian Clock Network in the Brain of Different Drosophila Species** • Christiane Hermann, University of Wuerzburg

P40 **Rhythms in the Southern Ocean** • Ezio Rosato, University of Leicester

P41 **Eclosion Phenotypes in Drosophila Clock Mutants** • Celia Hansen, University of Leicester

P42 **Genome-Wide Target Genes of the Circadian Clock in a Human Osteosarcoma Cell Line** • Julia Stefanski, Heidelberg University

P43 **Targeted Disruption of the Inhibitor of DNA Binding 2 (Id2) Gene Results in a Circadian Clock and Metabolic Phenotype** • Peng Zhou, University of Notre Dame

P44 **Analyzing the Role of RNA-Binding Proteins in Circadian Gene Expression** • Naomi Borel, University of Lausanne

P45 **Clock Gene Expression in Healthy and Regenerated Medial Prefrontal Cortical Tissue of Mice** • Brooke Rakai, University of Calgary

P46 **Synchronization of the Drosophila Circadian Clock by Temperature, Humidity and Mechanical Stimulation** • Werner Wolfgang, Queen Mary University of London

P47 **Further Investigations of Circadian Rhythms in Erthyrocytes** • Kevin Feeney, Cambridge University

P48 **Biochemical Analysis of the Canonical Model for the Mammalian Circadian Clock** • Rui Ye, University of North Carolina, School of Medicine

P49 **The Expression of Clock Gene Per and Clock-Controlled Genes Brp and Atp Alpha in the First Optic Neuropil of the Visual System of Drosophila** • Milena Damulewicz, Jagiellonian University

P50 **A Tale of Two Components: Physiological Effects of an Experimental Chronic Jet-Lag Schedule** • Diego Golombek, National University of Quilmes / CONICET

P51 **Non-optimal gene codon usage is important for the expression, structure and function of the circadian clock protein FREQUENCY** • Mian Zhou, UT Southwestern Medical Center at Dallas

P52 **Methylphenidate Modifies the Motion of the Circadian Clock** • Michael Antle, University of Calgary

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