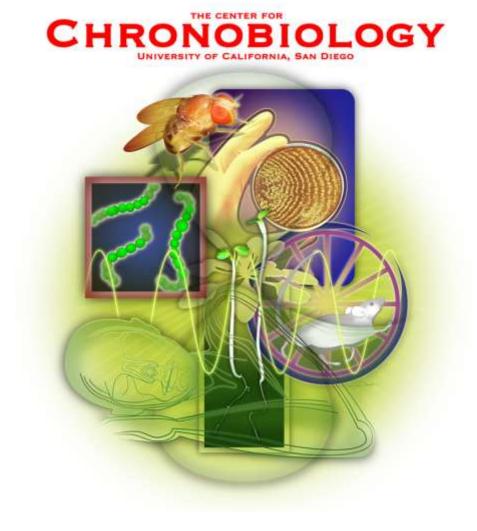
# Center for Chronobiology

CCB

5 year Review of the Organized Research Unit Fiscal Year 2010 thru 2013



The University of California, San Diego Center for Chronobiology

#### **Director's Statement**

Center for Chronobiology (CCB)

The UCSD Center for Chronobiology (CCB) was established as an Organized Research Unit in 2009 to leverage the exceptional strength and breadth of circadian biology research that is conducted at UCSD.

The Center brings together faculty from diverse disciplinary areas of the campus, including the Biological, Physical, and Social Sciences, Engineering, and the Schools of Medicine and Pharmacy. CCB focuses on questions in chronobiology - the study of biological timing – found at all levels of biological complexity and central to the organization of life, with an emphasis on circadian (~24 h) biological rhythms. With 34 members at UCSD, and affiliate members at the Scripps Research Institute, UC Santa Cruz, and UC Merced, CCB is the largest aggregate of circadian rhythms researchers in the world. CCB



members span an exceptional range of research approaches and organisms, from *in vitro* rhythms and synthetic biology in micro-organisms, through plant and animal model organisms, to human clinical research. Moreover, members are, as individuals, leaders in their specific areas. Since the establishment of CCB, three members have been elected to the National Academy of Sciences (Golden, Sejnowski, and Spitzer). The establishment of this ORU in 2009 had the immediate effect of focusing both internal and international attention on our unique concentration of strength in circadian biology and placing UCSD on the map as a major center of research in this broad field. In subsequent years, the presence of this vibrant group has served to attract faculty, postdocs, and graduate students to UCSD who are interested in various aspects of circadian rhythms research, and to turn the eyes of the world to our campus for leadership in this field.

#### **GOALS AND OBJECTIVES**

CCB was established to provide infrastructure to foster interdisciplinary research in the broad area of biological timing. CCB hosts activities to facilitate synergistic activities among its members and provides administrative support for submitting and administering grant applications.

The mission of CCB is to:

- Foster innovative research that reveals the mechanisms, general principles, and applications of biological rhythms in diverse organisms.
- Provide support for investigators to incorporate the study of daily rhythmicity into their biological studies, particularly as it relates to behavior, physiology, and medicine.
- Form alliances among scientists working in basic and clinical aspects of chronobiology.
- Mentor undergraduate, graduate, and postdoctoral students in cross-disciplinary approaches through chronobiology research.
- Produce and disseminate materials for education and scientific advocacy on chronobiology, a topic of intrinsic interest and broad societal relevance.

In our inaugural year our major goal was to put CCB on the map both on campus and around the world as a premier center for chronobiology research. We met these goals by: establishing an active Executive Committee; hosting local activities and outfitting a conference room and offices to engage our members and encourage interaction; launching an attractive and informative website (ccb.ucsd.edu); and hosting a symposium with top chronobiology speakers from within CCB and across the nation. In subsequent years

we have built on this model by: establishing a stellar external advisory committee; expanding our local workshop to provide more training opportunities; expanding the annual symposium to an international scale and incorporating outreach components; working to encourage collaborative research. We have succeeded spectacularly garnering an international reputation as a top – perhaps the top – circadian biology community in the world, and in providing a cohesive



CCB Executive Committee Members

stimulating environment for our trainees. Additional goals for the coming years include (1) strengthening our financial base through competitive grants, development, and revenue-generating workshops and (2) increasing our impact on public health through synergistic research endeavors and improved translation of research findings to effect public, medical, and community behaviors.

#### LEADERSHIP, ADMINISTRATION, AND GOVERNANCE

CCB is guided by a dedicated Executive Committee that meets monthly and directs the activities of the center. In addition to Director Susan Golden (Biological Sciences) and Associate Director David Welsh (Psychiatry), members include Michael Gorman (Psychology), Stuart Brody (emeritus, Biological Sciences), Sonia Ancoli-Israel (emeritus, Psychiatry and Medicine), Satchin Panda (Salk), and Colleen Doherty (postdoctoral representative). Additionally, an outstanding External Advisory Committee meets annually to review CCB. Members include Gene Block (UCLA Chancellor), Alexander Hoffmann (UCSD representative and Chair of Board, Co-director of the Bioinformatics and Systems Biology Graduate Program), Steve Kay (former CCB member, Dornsife Dean, USC, National Academy of Sciences member), Margaret Moline (Director of Clinical Research in the Medical Research Department at Purdue Pharma L.P.), Joseph Takahashi (Loyd B. Sands Distinguished Chair in Neuroscience, University of Texas Southwestern Medical Center, National Academy of Sciences member), Michael Young (VP for Academic Affairs, The Rockefeller University, National Academy of Sciences member), and Phyllis Zee, Associate Director, Center for Sleep and Circadian Biology and Professor, Northwestern University Institute for Neuroscience). (see letters of support, Appendix A)

#### **ACCOMPLISHMENTS: RESEARCH ACTIVITIES**

A central goal of CCB has been to foster interactions among circadian biologists at UCSD and outside of the university, stimulating synergisms that enhance the impact of individual programs that are already outstanding. The focal activity is an annual symposium, "From Cells to Clinic," that is cited by many participants as one of the best international meetings in this field, and which emphasizes our unique breadth of expertise from synthetic biology and single cell molecular mechanisms to translational and clinical research (See a selection of letters of support, Appendix B). The fifth annual meeting is scheduled for February 5-7, 2014. This symposium provides the faculty and trainees of CCB laboratories with a unique opportunity to interact with top circadian biologists in an intimate venue (approximately 120 in attendance). Each year, the symposium brings in approximately 12 outside experts in diverse areas of circadian rhythms biology to join approximately 6 CCB members as speakers. There is no other meeting



Collaboration - Invited speakers from around the world - 2013

in the field that covers such a breadth of topics while avoiding parallel sessions that would divide the clinicians from molecular biologists. The prominence of speakers invited to this annual meeting and the quality of the interactions and presentations quickly enhanced the international reputation of circadian researchers at UCSD. Interactions at other conferences and comments from grant reviewers indicate that the research environment at UCSD is acknowledged as outstanding in circadian biology. Support for this valuable meeting has shifted from initial ORA operating funds to a mix of grants, sponsors, and registration fees that will allow the meeting to be sustainable and remain accessible to trainees.

We are actively working to expand the impact and influence of CCB by developing collaborations with top circadian biologists throughout California. We recently secured a grant from UCOP to re-configure our fall workshop (November 8, 2013, see Training, below) to incorporate a UC System-wide planning meeting that includes chronobiology colleagues from other UC campuses (see proposal, Appendix C). Together, the California consortium has superior expertise in circadian aspects of: sleep, mood disorders, and behavior; metabolism and nutrition; reproduction; plant circadian rhythms; and molecular and structural mechanisms of clocks in cells. The workshop goal will be to identify "grand challenges" and special topics for which the California circadian research community can have an exceptional impact and will be especially competitive. A major goal of the workshop is to identify specific strengths among the approximately 50 California circadian biology laboratories that will make us competitive for a variety of funding mechanisms, including: a multi-campus center grant, such as NIH P50; W.M. Keck Science and Engineering, Medical Research, and Southern California Programs; multi-investigator R01 and P01 grants from NIH. In preparation for this workshop, we are developing a Research Web Portal, based on the CBAM

(Center for Brain Activity Mapping) site created by the Kavli Institute for Brain and Mind for the new BRAIN initiative, and expect to have it operational by October, 2013.

Some examples of collaborative efforts that would not have come together without CCB include: (1) A Chancellor's Interdisciplinary Collaboratories program grant from the Dean of Graduate Studies (Emergent circadian waveforms from multiple component oscillations: computational, biosynthetic, microbial, and vertebrate models) to support students from labs in Psychology, Bioengineering, and Philosophy (manuscripts in preparation); (2) A collaboration of the Golden and Bechtel groups on use of diagrams and other visual representations in scientific reasoning, using circadian research as an exemplar; (3) a collaboration between the S. Kay and LiWang labs to determine the molecular structure of a plant clock component; (4) a proposal to the Keck Science and Engineering Research Program (Golden, Hasty, Tsimring) which was a finalist for external submission.

Grants specifically submitted through CCB are listed in the Income section. CCB faculty members are well funded, although many submit their grants through their primary appointment units. A large fraction of our members have appointments in Health Sciences, and barriers remain for submission of those grants through CCB. Some other ORUs serve largely to provide a UCSD unit for researchers who otherwise would not have a home appointment. Although we expect growth in research faculty appointments in the future, this has not been a driving force for CCB. Rather, CCB provides an interactive network to synergize the activities of dozens of labs in diverse departments that would not otherwise come together and discuss common interests in circadian rhythms. Beyond specific new collaborations, the increased interaction among circadian scientists from different primary units has a stimulatory effect that inspires more creative research. We will focus in the coming years on nucleating group grants for collaborative efforts that extend beyond individual labs.

#### **ACCOMPLISHMENTS: STUDENT RESEARCH TRAINING**

Training is an area in which CCB shines. Just over 100 graduate and postdoctoral trainees work in CCB labs and participate in our activities. A postdoctoral trainee serves on the CCB executive committee. We strive

to integrate our efforts from undergraduate education through graduate and postdoctoral mentoring, faculty research success, and community outreach. Each 300 fall upper-level undergraduate students enroll in a course called "Circadian **Rhythms** Biological Clocks," which is cross-listed between Biology and Psychology and is taught



by CCB members Gorman, Golden, and Panda, with guest lectures on their research specialties by Ancoli-Israel, Drummond, Welsh, and a graduate or postdoctoral CCB member (http://ccb.ucsd.edu/activities-and-events/courses.html). Graduate students from CCB labs serve as Teaching Assistants in the course. Because the content spans topics from the molecular interactions of circadian oscillators in cyanobacteria and plants, through the network properties of neurons in the suprachiasmatic nucleus of mammals, to the sleep/wake cycles of humans, the TAs expand their knowledge of circadian systems beyond that used in their own labs. This course is unique internationally in its size and scope of topics, requiring psychology

students, molecular biology students, and even professors to work outside their comfort zones. The course attracts undergraduate researchers to CCB laboratories and inspires students to continue in biomedical fields.

Our Clockwatchers journal club meets twice a month during the academic year to cover diverse papers of interest to the CCB community. Graduate students, postdocs, and faculty members participate in these meetings, and exchange ideas related to the field and their own research. The total annual participation is just under 300 in attendance.

The fall CCB workshop is an opportunity to highlight local circadian research, and for trainees to hone presentation skills. Approximately 100 participants per year attend this all-day workshop, which features presentations by 7 graduate and postdoctoral CCB scientists, 4 CCB faculty, and one outside faculty usually from another UC campus (http://ccb.ucsd.edu/activities-and-events/pastevents/workshop-fall-2012.html). One of the trainee speakers from the fall workshop is selected for an invited spot in the "From Cells to Clinic" international symposium. The fall workshop is also used to disseminate information about CCB, and to solicit feedback from participants. A questionnaire distributed at the last workshop showed that the opportunity trainees most wanted from CCB is additional access to teaching experience. As a result, CCB worked with the organizers of the International Chronobiology Summer School for 2013 (https://my.vanderbilt.edu/chronobiologysummerschool/), held at Vanderbilt University, to incorporate three CCB postdoctoral trainees as instructors in the course. This week-long course (https://my.vanderbilt.edu/chronobiologysummerschool/) attracts students from all over the world to learn topics similar to those covered in our undergraduate course at UCSD. Meeting organizer Dr. Erik Herzog (see letter of support, Appendix D) indicated that the CCB instructors provided a creative and stimulating addition to the course, and that he will recommend that postdoctoral instructors be recruited in future years as well.

#### **ACCOMPLISHMENTS: RELATIONSHIPS TO OTHER ACADEMIC UNITS**

CCB membership spans the UCSD Health Sciences departments of Psychiatry, Reproductive Medicine, and Pharmacology, The Kavli and BioCircuits Institutes, the Division of Biological Sciences, and the departments of Philosophy, Physics, and Psychology. Three faculty members at other institutions are affiliate or associate members of CCB: C. Partch, UC Santa Cruz; A. LiWang, UC Merced; K. Lamia, The Scripps Research Institute. Additionally, former CCB member S. Kay is now the Dornsife Dean at the University of Southern California, and an External Advisory Board member. Thus, our connections to academic units outside UCSD are significant.

CCB is working closely with the Division of Biological Sciences CCE | Bio Center for Continuing Education in the BioSciences to increase our education and outreach efforts and to identify stakeholders and potential supporters in the community. CCE | Bio provides expert market analysis to identify constituencies that are interested in learning more about the field of circadian biology and to determine the scope, duration, and costs of workshops to fill the needs that are identified. As a result of this partnership, a half-day "Workshop on Circadian Rhythms and Shiftwork" will be offered in conjunction with the 2014 CCB Annual "From Cells to Clinic" symposium (see proposal, Appendix C). The half-day workshop will be targeted to industries that rely on shiftwork: transportation, hotels, hospitals, and information technologies. By timing the stakeholder workshop in conjunction with our scientific conference, we can incorporate some additional national and international experts in shiftwork from outside of CCB who will be on campus as invited speakers for our symposium.

As discussed in the Research section, we are actively seeking greater interaction with colleagues at other UCs. This may position us well to compete for a Multicampus Research Programs and Initiatives (MRPI) center grant to further enhance our research collaborations and other group activities.

#### **ACCOMPLISHMENTS: PUBLIC SERVICE AND OUTREACH**

In the past four years, CCB members have been very active in presentations to groups in local, national, and international venues. Appendix E Table 1 provides a partial list of presentations by members who responded with records of their activities. CCB members have worked with media outlets such as radio, TV, documentaries, newspaper articles, and online interviews to reach broad constituencies. Local media, including the La Jolla Light, San Diego Union Tribune, and KPBS, have publicized our symposia, workshops, and research publications. Some research highlights, which we post on our website ccb.ucsd.edu, have made major news stories, such as work from the Panda lab on the role of meal timing in obesity, and from the Kay lab on potential clock-resetting drugs. The Science Network covered the 2012 "From Cells to Clinic" symposium and posted talks and interviews online (http://thesciencenetwork.org/programs/ccb-symposium-2011). Students from San Diego's High Tech High attended a session of the symposium one year, and we have plans to extend invitations to students from High Tech High and the Preuss School for 2014. We have recently established a LinkedIn community to encourage information exchange: (http://www.linkedin.com/groups/UCSD-Center-Chronobiology-4189278/about).

#### **ACCOMPLISHMENTS: DIVERSITY**

CCB laboratories work to advance UCSD's goals of enhancing diversity in the research community by mentoring students from under-represented groups and joining conferences that attract diverse participants, such as SACNAS and MARC. Appendix E Table 2 lists some of these activities. Specific summer programs in which CCB members participate include UC-LEADS, STARS, and NIH MARC and ACCESS. CCB members Dmitri Nusinow and Susan Cohen were appointed as University of California President's Postdoctoral Fellows, in a program designed to promote equal opportunity among the UC faculty by encouraging a diverse candidate pool. CCB Director Golden is the new Faculty Equity Advisor for the Division of Biological Sciences.

#### **ACCOMPLISHMENTS: JUSTIFICATION FOR CONTINUANCE**

CCB is now firmly established and has an infrastructure that can support bold new initiatives. We seek to identify those areas in which we have special expertise and strength to lead the community. With many members who are leaders in the field, CCB has the stature and mandate to tackle transformational research, to transform public and medical awareness of circadian biology, and to stimulate student and granting agency enthusiasm for translational research in this area. Reaching these goals is our current mission. We are confident that we have the potential to stimulate new collaborations that have not yet been realized. In a pivotal time in which a range of medical fields, including cardiolology (http://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1211) and aging

(http://web.mit.edu/newsoffice/2013/the-link-between-circadian-rhythms-and-aging-0620.html) acknowledge the importance of circadian rhythms for both research and clinical translation, CCB is poised to be the group that coordinates and translates these connections. Our new grant from UCOP will help us to coordinate these efforts among UC campuses (see proposal, Appendix C).

Market analysis by our partner group CCE|Bio has revealed that the term "chronobiology" is less familiar to non-chronobiologists than "circadian." Accordingly, our Executive Committee suggests that we rename as the "Center for Circadian Biology", while preserving our established brand recognition as "CCB." Although "chronobiology," literally the biology of time, is a more inclusive moniker than "circadian," which

focuses more specifically on a 24-h timescale, "chronobiology" is not recognized outside of the circadian biology community. As we seek to increase our outreach and development activities, we are burdened by having to define our name before people realize that they're interested in us. Thus, we request renewal of CCB for 5 years with the new name "Center for Circadian Biology".

#### **ACCOMPLISHMENTS: SUCCESS METRICS**

In the coming 5-year period we will formalize our tracking of the metrics by which to gauge our growth and success. Key metrics (2009-13 numbers in parentheses where available):

#### Research

The numbers of:

graduate students (49) and postdocs (54) working in CCB members labs off-campus visitors to CCB labs participants (internal and external) attending our Fall workshop(s) (381) participants (internal and external) attending our international Symposia (738) new collaborations among the CCB members grants applied for through CCB (requested and funded amounts; current data in "Income")

#### **Training**

Attendance at Clockwatchers Journal Club sessions (~300/year)
Lectures presented by graduate and postdoctoral trainees on and off campus
Positions held by trainees after leaving CCB labs
Participation of CCB graduate students as TAs in "Circadian Rhythms – Biological Clocks"
Participation of CCB graduate students and postdocs as mentors of undergraduate students

#### **Outreach**

The numbers of and audiences for:

publications from CCB members (594)

lectures given by CCB members to audiences outside of UCSD workshops presented by CCB press releases, and articles about the activities of CCB and its members Participation of elementary and secondary students in CCB events

The numbers and countries of origin for hits on our website (26k visits, 71k views, 10 countries)

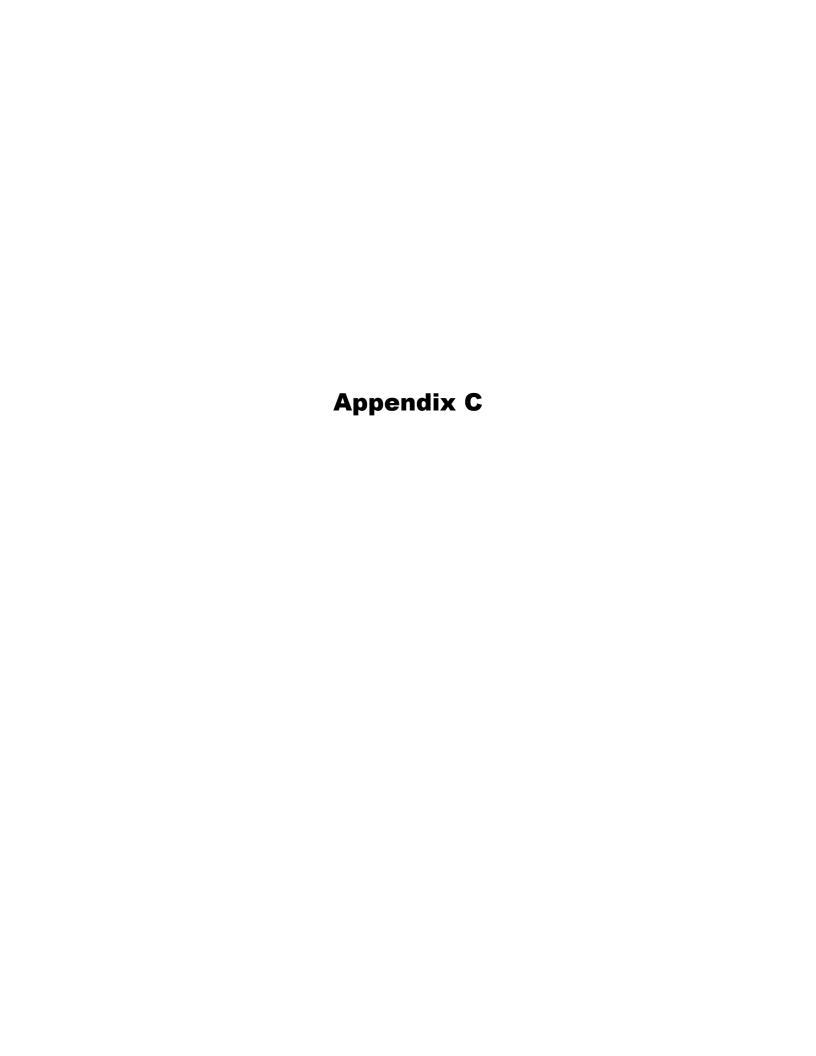
#### **Diversity**

The numbers of students in CCB member labs from the URM population

The spectrum of programs in which CCB participates

The participation of CCB members in conferences and events that encourage diversity in the research enterprise

The participation of CCB faculty in programs that promote STEM careers to a broad community



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OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND GRADUATE STUDIES

OFFICE OF THE PRESIDENT 1111 Franklin Street, 11th Floor Oakland, California 94607-5200

August 6, 2013

Susan Golden, PhD Director, UCSD Center for Chronobiology University of California, San Diego sgolden@ucsd.edu

Dear Professor Golden,

Thank you for your request to my office for Research Opportunity Funds to support the upcoming workshops focused on *Integrating Circadian Rhythms Research and Outreach to Change the Landscape of Public Health Policy*. Your proposal received a favorable review from our UCOP funding committee, and I am pleased to tell you that we will fund your request of \$20,000 to support the workshops and the development of the related web-based coordination resource. Our review committee found your proposal to leverage the existing framework at UCSD and extend it to other interested researchers throughout the UC community to be compelling, and especially liked the emphasis on strategic planning and organization to collectively identify grand challenges in this area.

This funding is one-time only, and is intended to encourage the attraction of outside sponsorship for ongoing research in these areas. Annette Morrison-Politeo in my office will transfer the funds to a local campus account. Please have one of your local administrators contact her at <u>Annette.Morrison-Politeo@ucop.edu</u> to assist her in making the transfer.

Finally, we are very interested in hearing the outcomes of your project and will look forward to receiving a progress report from you at the end of this fiscal year (2013-14). Of course, we would welcome hearing news from you sooner, as well. We are particularly interested in any proposals submitted as a result of the proposed project and external funding secured for continued work in these areas.

Congratulations. We look forward to hearing from you on the success of your project.

Sincerely,

Steven Beckwith Vice President

Research and Graduate Studies

A. Below L

cc: Vice Chancellor for Research Sandra Brown, sandrabrown@ucsd.edu

Vice Chancellor for Research Harris Lewin, lewin@ucdavis.edu

Vice Chancellor for Research John Hemminger, jchemmin@uci.edu

Vice Chancellor for Research James Economou, jeconomou@conet.ucla.edu

Vice Chancellor for Research Samuel Traina, straina@ucmerced.edu

Business Analyst Annette Morrison-Politeo, Annette Morrison-Politeo@ucop.edu

RISA Analyst Emily Rader, Emily.Rader@ucop.edu

# Integrating Circadian Rhythms Research and Outreach to Change the Landscape of Public Health Policy

**Participating Faculty** (key personnel; many others at most campuses)

UCSD Center for Chronobiology (CCB)

Susan S. Golden – CCB Director and Distinguished Professor of Molecular Biology David K. Welsh – CCB Associate Director and Department of Psychiatry Sonia Ancoli-Israel – Director, Gillin Sleep and Chronomedicine Research Center, and Departments of Psychiatry and Medicine

William Bechtel – Department of Philosophy, Interdisciplinary Program in Cognitive Science Michael Gorman – Department of Psychology

Ralph Greenspan – Associate Director, Kavli Institute for Mind and Brain Satchin Panda – Regulatory Biology Laboratory, Salk Institute

#### UC - Davis

Stacey Harmer – Department of Plant Biology

#### UC – Irvine

Paolo Sassone-Corsi – Center for Epigenetics and Metabolism, School of Medicine

#### **UCLA Medical School**

Christopher Colwell – Brain Research Institute, Psychiatry and Biobehavioral Sciences, Circadian and Sleep Medicine affinity group

#### UC – Merced

Andy LiWang – School of Natural Sciences, UCSD CCB Affiliate Member

#### UC - Santa Cruz

Carrie Partch – Department of Chemistry & Biochemistry, UCSD CCB Affiliate Member

#### UCSF

Louis J. Ptáček – Department of Neurology, Howard Hughes Medical Institute

#### **Proposed Activities**

This project will leverage the outstanding strength of UC system scientists in circadian biology research in order to change the public health landscape through synergistic research endeavors and improved translation of research findings to public, medical, and community behaviors. Research has shown that the timing of biological processes in humans and most other organisms is so extensive and significant that essentially all aspects of human enterprise - behavior, health, agriculture, environment, industry – are affected by biological clocks. For example, UC scientists have demonstrated that: the development of obesity in laboratory mice has as much to do with the time of day at which feeding occurs as with the total number of calories ingested [1]; the immune system responds differently to Salmonella infection at different times of day [2]; and circadian dysfunction is likely to be an integral part of the pathology associated with Parkinson's Disease [3]. With many leaders in the field, the UC chronobiology (biological timing) community has the stature and mandate to tackle transformational research, transform public and medical awareness of circadian biology, and stimulate student and granting agency enthusiasm for translational research in this area. A UCOP grant will support: (1) a workshop that will identify collaborative research initiatives for which the UC chronobiology community will be especially competitive; (2) development of a web-based resource for coordinating collaborative research efforts; and (3) a workshop to educate business and industry stakeholders on the biological implications of shift work on health.

The project leverages an existing framework: the UCSD Center for Chronobiology (CCB), an ORU that has 34 members at UCSD and affiliate members at UC Santa Cruz and UC Merced, and is the largest aggregate of circadian rhythms researchers in the world. Additional strength in this field is present throughout the UC community, such as the UCLA Circadian and Sleep Medicine affinity group. The UCOP grant will enable UC circadian researchers to identify grand challenges that can be more successfully approached through collaboration, and to identify smaller groups that will be nationally competitive in targeted research areas. Together, the UC consortium has superior expertise in circadian aspects of: sleep, mood disorders, and behavior; metabolism and nutrition; reproduction; plant circadian rhythms; and molecular and structural mechanisms of clocks in cells. A fall workshop will be used to identify strengths for new inter-UC research collaborations, and to align groups, topics, agencies, and funding mechanisms for effective targeting of effort. The workshop will prepare a roadmap for Center and multiple-PI grant proposals to be submitted to targeted agencies. A webbased portal will be developed to facilitate collaboration and exchange of data among campuses. These organizational efforts will result in increased extramural funding to UC researchers and transformational advances in circadian research.

Despite clear research demonstrating the negative health effects of circadian disruption, the public has little understanding of circadian rhythms and biological clocks beyond the recognition of jetlag as a travel annoyance, and physicians receive no training about the potential benefits of delivering therapies at times of day when they are more effective and have fewer side effects. A winter workshop will inform industry groups on the biology, pathology, and implications of shift work. Targeted stakeholders include airlines, hospitals, trucking companies, police and firefighters, railroads, hotels, and technology companies such as Qualcomm. The anticipated long-term impacts of outreach efforts are both tangible and far-reaching for California communities: e.g., enhanced public safety from fewer industrial and traffic accidents; health benefits from optimally timed treatments and reduction in obesity; improved agricultural and industrial productivity through better environmentally adapted crops, and health-protecting labor practices.

Hatori, M., et al., *Time-restricted feeding without reducing caloric intake prevents metabolic diseases in mice fed a high-fat diet.* Cell Metab., 2012. **15**(6): p. 848-60.

Bellet, M.M., et al., Circadian clock regulates the host response to Salmonella. Proc. Natl. Acad. Sci. U S A, 2013. **110**(24): p. 9897-902.

Willison, L.D., et al., Circadian dysfunction may be a key component of the non-motor symptoms of Parkinson's disease: insights from a transgenic mouse model. Exp. Neurol., 2013. **243**: p. 57-66.

#### Anticipated project results and deliverables

#### 1. Research Workshop

Results: UCOP Funding will allow an annual UCSD CCB workshop to be re-configured as a UC System-wide planning meeting that includes chronobiology colleagues from other UC campuses. The workshop goal will be to identify "grand challenges" and special topics for which the California circadian research community can have an exceptional impact and will be especially competitive. In the past, this workshop has featured the research of local PIs, postdocs, and graduate students, and hosted one invited speaker from another UC each year. This year, the timing of the workshop (November 8, 2013) has been chosen to be adjacent to the Society for Neuroscience meeting that will be held in San Diego, to encourage broad participation from other UC campuses. A major goal of the workshop is to identify specific strengths among the approximately 50 California circadian biology laboratories that will make us competitive for a variety of funding mechanisms, including: a multicampus center grant, such as NIH P50; W.M. Keck Science and Engineering, Medical Research, and Southern California Programs; multi-investigator R01 and P01 grants from NIH.

**Deliverables:** A white paper will be developed from the November workshop to provide the framework for a variety of collaborative research initiatives, so that teams can be identified quickly in response to Requests for Proposals (RFPs) that arise.

#### 2. Research Web Portal

**Results:** A secure web interface will be created, based on user-friendly, low-cost platforms, which can be used to share unpublished datasets among UC chronobiology researchers, organize materials for grant submissions, and facilitate collaborative discussion. Our consortium will also benefit greatly from the impending development of a similar resource by participants in the new BRAIN initiative (http://www.whitehouse.gov/infographics/brain-initiative), which includes members of the UCSD CCB.

**Deliverables:** The portal, accessible by colleagues throughout the UC system, will be operational by August 2014, with continuous improvements to be made as needed.

#### 3. Community Stakeholder Workshop on Shift Work

Results: A half-day workshop will be hosted in February 2014 to inform diverse stakeholders about the biology, health implications, and industrial hazards of shift work. The workshop will coincide with an annual international symposium, "From Cells to Clinic," that is hosted by UCSD CCB and highlights work of researchers from several UCs, as well as national and international speakers. By coordinating the workshop with the annual symposium, outside speakers will be present to augment the expertise of local experts on shift work. Networking opportunities will be organized to facilitate interaction among scientists at the symposium and regional stakeholders. Targeted audiences for the workshop include human resources personnel and managers from airlines, hospitals, trucking companies, police and firefighters, railroads, hotels, and technology companies such as Qualcomm. Interaction with the community will be catalyzed by partnering with CONNECT (http://connect.org), a regional program that has worked successfully since 1985 to link San Diego research organizations, inventors, entrepreneurs, professional service providers, policymakers, and venture capital investors.

**Deliverables:** The half-day workshop will be held in February 2014. Diverse stakeholders will be enlightened regarding research in circadian rhythms as it relates to shift work and the heath effects of circadian desynchrony. Opportunities for interactions among stakeholders and circadian rhythms researchers will stimulate additional industrial and community partnerships.

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PHONE: (858) 534-3526 FAX: (858) 534-3868

July 16, 2013

Re: UC Research Opportunity Fund

To whom it may concern:

The University of California, San Diego strongly supports the attached proposal, originating from the UCSD Center for Chronobiology (CCB), to strengthen the system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus multi-investigator grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

The CCB is a formal Organized Research Unit (ORU) at UC San Diego and, as such, will receive over \$108,000 in budgetary and administrative support from UC San Diego during the coming year, in addition to space to enhance linkages of research faculty from across campus.

The Office of Research Affairs also provides central administrative services at no cost to CCB, including an Academic Personnel Analyst, an HR Specialist, Timekeeping, DSA, and IT services, on an as needed basis.

I am very pleased to be able to lend my support to this request. Please let me know if you have any questions I can answer.

Sincerely,

Sandra A. Brown

Vice Chancellor for Research

University of California, San Diego

#### **Budget/Budget Justification – Total request: \$20,000**

The project is built upon existing infrastructure of the UCSD Center for Chronobiology (CCB), an ORU which provides administrative and business support for circadian rhythms researchers at UCSD (\$108,502 allocation FY2014). UCSD does not provide an operating budget for CCB. However, we anticipate raising at least \$25,000 in corporate sponsorships and registrations for the "Cells to Clinic" workshop and have funds in hand from previous year budgets for meeting expenses other than the UC-wide scope expansion and stakeholder workshop proposed here. Thus, two meetings which are already in planning stages for the 2013-14 academic year can be expanded with UCOP support to achieve the goals of the project.

#### **Research Workshop Expenses**

<u>Justification</u>: The workshop is a key feature of the planning project. It will bring together PIs, students, and postdocs from many UC campuses to set the priorities for our joint research efforts.

Travel for participants from other UCs to UCSD (lodging, mileage, and/or airfare)

Los Angeles area (5 X \$400)	\$2,000
UCSF, UCD, UCSC, UCM (4 X \$750)	3,000
Food (breakfast, breaks, lunch, reception)	
\$40 per person X 50 participants	2,000
miscellaneous (venue charges, A/V, nametags, parking)	1,000

#### **Shift Work Stakeholder Workshop Expenses:**

Justification: The stakeholder workshop benefits from the existing infrastructure of the "Cells to Clinic" symposium, which is organized by UCSD CCB and will attract scientists from partner UCs and international speakers. The faculty participating on this proposal from other UCs have all been invited presenters at the symposium in the past or for 2014. Registration scholarships will enable trainees from other UCs to participate in the 2014 symposium. The workshop and symposium joint reception will build partnerships among UC scientists and regional industry, and will help to communicate the impact of our research on the community. Stakeholder Workshop participants will be charged a registration fee, which will provide funds for future workshops.

Travel for faculty from other UCs to UCSD for workshop and "Cells to Clinic" symposium			
(lodging, mileage, and/or airfare) (5 X \$400)	\$2,000		
honoraria for 3 non-UC speakers to present in workshop	900		
Food (breakfast, breaks, lunch)			
\$30 per person X 40 participants	1,200		
networking joint reception for Workshop and Symposium participants	900		
miscellaneous (venue charges, A/V, nametags, parking)	1,000		
Registration scholarships for students from other UCs to attend the			
"Cells to Clinic" symposium (8 X \$125)	1,000		

#### **Web Portal Expenses**

<u>Justification</u>: Funds are requested to develop a low-cost, user-friendly collaborative work environment for participants, based on Google or Microsoft platforms for online document sharing, chat, and email. An additional feature will be secure hosting of large, unpublished datasets with capabilities for password-enabled data sharing. Such an environment is necessary to plan and coordinate collaborative research and grant proposals.

Website and portal development	3,000
Data hosting (SDSC Cloud)	2,000

#### UNIVERSITY OF CALIFORNIA, DAVIS

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OFFICE OF RESEARCH

HARRIS A. LEWIN

VICE CHANCELLOR FOR RESEARCH

1850 RESEARCH PARK DRIVE, SUITE 300 DAVIS, CALIFORNIA 95618

TELEPHONE:

(530) 754-7764

FAX:

(530) 752-7269

July 16, 2013

Office of Research and Graduate Studies UC Research Opportunity Fund Office of the President, University of California

RE: UC Research Opportunity Fund Proposal: "Integrating Circadian Rhythms Research and Outreach to Change the Landscape of Public Health Policy"

UCOP Research Opportunity Fund Selection Committee Members:

The University of California at Davis strongly supports the attached proposal, originating from the UCSD Center for Chronobiology, to strengthen the system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus multi-investigator grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

Harys A. Lewin, Ph.D. Vice Chancellor for Research

/pk

#### UNIVERSITY OF CALIFORNIA, IRVINE

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JOHN C. HEMMINGER VICE CHANCELLOR FOR RESEARCH OFFICE OF RESEARCH 160 ALDRICH HALL RESITY OF CONTROL

SANTA BARBARA · SANTA CRUZ

IRVINE, CALIFORNIA 92697 Phone 949-824-5796 Fax 949-824-2095 JCHEMMIN@UCI.EDU HTTP://SURFSCI.PS.UCI.EDU

22 July 2013

Vice President Steven Beckwith
Office of Research and Graduate Studies
University of California
Office of the President
1111 Franklin Street, 11th Floor
Oakland, CA 94607

Re: UC-wide clock activities support letter

Dear Vice President Beckwith:

The University of California, Irvine supports the attached proposal, originating from the UCSD Center for Chronobiology, to strengthen the UC system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus, multi-investigator grant proposals. The proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field and will help to engage ties between UC researchers and industry partners.

Sincerely,

John C. Hemminger
Vice Chancellor for Research

Professor of Chemistry

James S. Economou 2147 Murphy Hall 140501

Phone: (310) 825-7943 Fax: (310) 206-6030

Email: jeconomou@conet.ucla.edu

July 15, 2013

Dear UCOP,

The University of California at Los Angeles strongly supports the attached proposal, originating from the UCSD Center for Chronobiology, to strengthen the system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus multi-investigator grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

Cordially,

James S. Economou

en S Econ

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OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

UNIVERSITY OF CALIFORNIA, MERCED Mailing Address:
P.O. BOX 2039
MERCED, CALIFORNIA 95344
(209) 228-7964
(209) 228-6906 - Fax
July 15, 2013

Vice President Stephen Beckwith Office of Research and Graduate Studies University of California Office of the President 11 Franklin Street Oakland, CA 94607

Dear Vice President Beckwith;

The University of California at Merced strongly supports the proposal entitled "Integrating Circadian Rhythms Research and Outreach to Change the Landscape of Public Health Policy", originating from the UCSD Center for Chronobiology, to strengthen the system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus multi-investigator grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

Sincerely,

Dr. Samuel Traina

Samuel S. Traina

Professor of Natural Science and Engineering

Vice Chancellor for Research and Economic Development

#### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

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SANTA BARBARA • SANTA CRUZ

22 July, 2013

The University of California at San Francisco strongly supports the attached proposal, originating from the UCSD Center for Chronobiology, to strengthen the system-wide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multicampus multi-investigator grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

Sincerely,

Louis J. Ptáček, M.D.

Coleman Distinguished Professor of Neurology Investigator, Howard Hughes Medical Institute Ying-Hui Fu, Ph.D. Professor of Neurology

#### UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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OFFICE OF THE CAMPUS PROVOST AND EXECUTIVE VICE CHANCELLOR

1156 High Street Santa Cruz, California 95064 831-459-3885

July 24, 2013

University of California Research Opportunity Fund Committee Office of Research and Graduate Studies University of California 1111 Franklin Street Oakland, CA 94607

Re: Research Opportunity Fund Proposal: Integrating Circadian Rhythms Research and

Outreach to Change the Landscape of Public Health Policy

#### Dear Committee Members:

The University of California at Santa Cruz strongly supports the attached proposal, originating from the UCSD Center for Chronobiology, to strengthen the systemwide collaboration of circadian rhythms researchers. The proposed efforts will enhance the rates of submission and competitiveness of UC multi-campus, multi-investigator, grant proposals. Moreover, the proposed outreach efforts will help to communicate to the public the impact of research discoveries in the circadian rhythms field, and will help to engage ties between UC researchers and industry partners.

Sincerely,

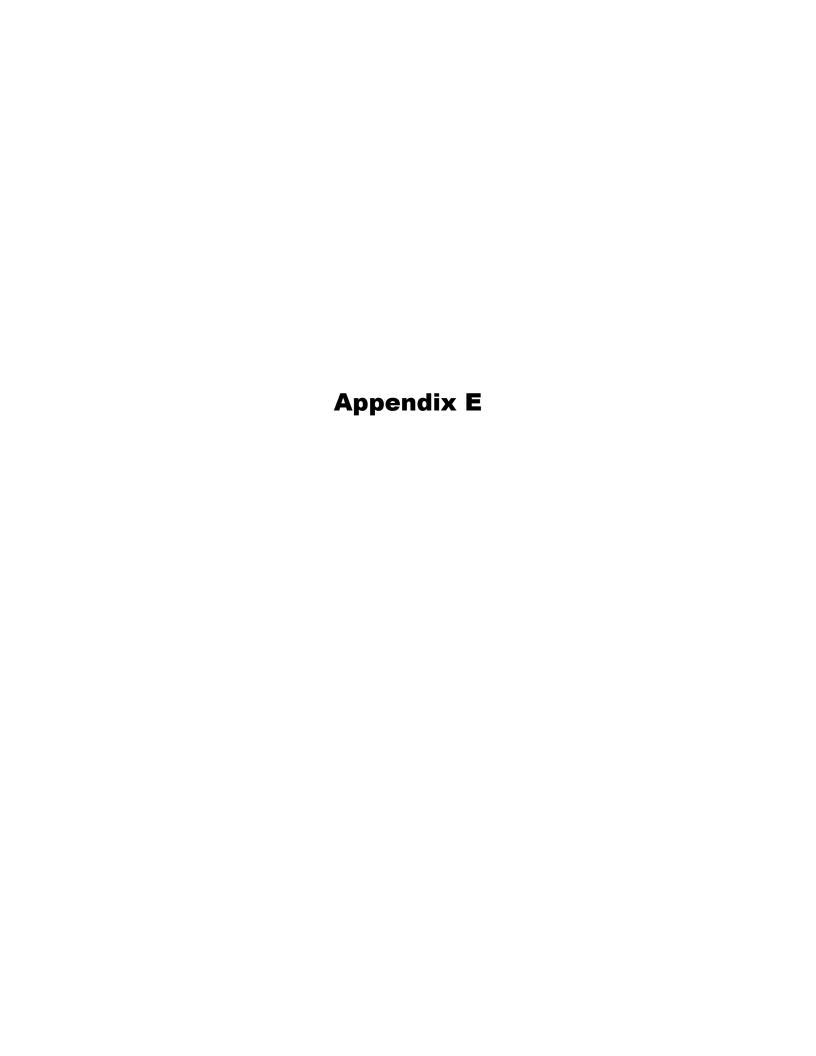
Alison Galloway

Campus Provost and

**Executive Vice Chancellor** 

cc:

Vice Chancellor for Research Brandt



# Public Service and Outreach (2009-2013)

	Presenter	Venue	Topic	Audience
1	Stu Brody	UCSD Emeritis Assoc.	Biological Rhythms	60
2	Stu Brody	OSHER (Senior Learners)	Biological Rhythms	60
3	Stu Brody	Univ. San Diego OSHER	Biological Clocks	100
4	Stu Brody	12:30 Club - La Jolla Country Club	Biological Clocks	60
5	Stu Brody	Newcomers Club - La Jolla Country Club	Biological Clocks	80
6	Stu Brody	La Jolla Rotary Club	Biological Clocks	50
7	Dan Kripke	TV - US Networks ABC	Sleeping Pills	
8	Dan Kripke	Radio - US Networks	Sleeping Pills	
9	Dan Kripke	Canadian Broadcasting	Sleeping Pills	
10	Dan Kripke	BBC Radio	Sleeping Pills	
11	Carrie Partch	UC Santa Cruz - Women in Science & Engineering	Science on Top	100
12	Carrie Partch	Scott's Valley Science & Technology Club	Biological Rhythms	50
13	Andy LiWang	Evening Dinner with Scientist Programs	Higher Edu Science	50
14	William Joiner	NARSAD	Sleep / Chronobiology	30
15	William Joiner	San Diego High School URM Students	Brain Fair	50
16	Pam Mellon	Magee-Womens Research Institute	Clocks / Endocrine	30
17	Susan Golden	Pt. Loma Nazarene University	Perspectives on Science	50
18	Susan Golden	La Jolla Women in Science and Technology	Perspectives on Science	30
19	Susan Golden	U.T. Pan American	HESTEC science symposium	200
20	Susan Golden	Torrey Pines High School	Careers in Science	15
21	Barbara Parry	St. Paul's Anglican Cathedral, San Diego	Hormones/Rhythms/Blues	50
22	S. Ancoli-Israel	UCSD - Women in Science & Engineering	Sleep / Work	30
23	S. Ancoli-Israel	Health Wellness Symposium	Insomnia	30
24	S. Ancoli-Israel	Daytimers Enrichment Program for Adults, SD	Sleep	25
25	S. Ancoli-Israel	San Diego Cancer Care Group	Sleep	30
26	S. Ancoli-Israel	The Stein Institute for aging, San Diego	Cancer / Sleep	40
27	S. Ancoli-Israel	The Stein Institute for aging, San Diego	Aging / Sleep	30
28	S. Ancoli-Israel	Better Breather's Club, San Diego	Insomnia / Sleep	30
29	S. Ancoli-Israel	San Diego Psychological Society	Insomnia / Sleep	30
30	S. Ancoli-Israel	SD Union-Tribune Aging Seminar	Aging / Sleep	30
31	S. Ancoli-Israel	SD Union-Tribune Aging Seminar	Aging / Sleep	30
32	S. Ancoli-Israel	NPR AM edition with Patricia Neighmond	Sleep	
33	S. Ancoli-Israel	San Deigo Police Department	Shiftwork	50
34	S. Ancoli-Israel	UCSD Library Lecture Series	Insomnia	30
35	S. Ancoli-Israel	PKPBS Producers Club	Sleep	
36	S. Ancoli-Israel	Community Clinics Webinar	Insomnia	
37	S. Ancoli-Israel	Qualcomm	Shiftwork	50
38	S. Ancoli-Israel	Qualcomm	Insomnia	50
39	S. Ancoli-Israel	Qualcomm	Insomnia	50
40		Nifty-Fifty -Univirstiy City High School	GMO genetically modified organism	45
41	-	Nifty-Fifty -Univirstiy City High School	Clocks	60

# **Diversity Contributions (2009-2013)**

	<b>CCB Member</b>	Program	Status / Name
1	Susan Golden	Faculty Equity Advisor, Division of Biological Science, UCSD	
2	Susan Golden	UC leadership Excellence	Undergraduate Student - Yohan Penny
3	Susan Golden	UC leadership Excellence	Undergraduate Student - Darae June
4	Susan Golden	STARS Program	MS Student - Guadalope Aguirre
5	Susan Golden	STARS Program	Undergraduate Student - Abel Duarte
6	Susan Golden	UC LEADS symposium poster judge	UC-wide conference Santa Cruz
7	Susan Golden	Hispanic Engineering, Science, & Technology (HESTEC)	Speaker at conference Univ. of TX - Pan American
8	William Joiner	STARS Program	Danielle Perry
9	A. Kauffman	Initiative for Maximizing Student Diversity Society	Graduate Student - Azim Khan
10	A. Kauffman	Initiative for Maximizing Student Diversity Society	Undergraduate Researcher - Christian Garcia
11	Carrie Partch	MARC - Minority Access to Research Program	Annual hosting of students
12	Carrie Partch	ACCESS	Annual hosting of students
13	David K. Welsh	Mentoring	Undergraduate student Kevin Kinyanjuwi from Kenya
14	Andy LiWang	American Chemical Society - SEED Program	Annual host of High School Students
15	Pam Mellon	Mentor Award	BMS PhD Student - Sol Reyna
16	Pam Mellon	Mentor Award	Research Student - Adaku Uzo-Okereke
17	Pam Mellon	Mentor Award	BMS PhD Student - Navarre Gutierrez-Reed
18	Colleen Doherty	UCSD - Biological Sciences	First generation URM college students
19	Susan Cohen	UC President's Postdoctoral Fellowship	Fellowship
20	<b>Dmitri Nusinow</b>	UC President's Postdoctoral Fellowship	Fellowship

#### Awards, Honors, Committee Service

# **STAFFING**

#### **ADVISORY COMMITTEE**

(16)

First Name	Last Name	Home Department	Appt. Date	End Date
Joseph	Amaral	Corporate Office of Science & Technology, Johnson & Johnson	05/01/2011	12/01/2011
Sonia	Ancoli-Israel	PSYCHIATRY	07/01/2009	
Gene	Block	UCLA, Psychiatry and Biobehavioral Sciences	05/01/2011	
Stuart	Brody	DIV BIOLOGICAL	07/01/2009	
Colleen	Doherty	DIV BIOLOGICAL	07/01/2012	
Susan	Golden	DIV BIOLOGICAL	07/01/2009	
Michael	Gorman	PSYCHOLOGY	07/01/2009	
Alexander	Hoffmann	CHEMISTRY	05/01/2011	
Steve	Кау	Univ of Southern California	07/01/2012	
Michael	McCarthy	Department of Psychiatry	05/01/2011	06/30/2012
Margaret	Moline	Purdue Pharma L.P.	09/01/2012	
Satchidananda	Panda	DIV BIOLOGICAL	07/01/2009	
Joseph	Takahashi	Univ. Texas Southwestern, Neurosciences	05/01/2011	
David	Welsh	PSYCHIATRY	07/01/2009	
Michael	Young	Rockefeller University, Academic Affairs and Genetics	05/01/2011	
Phyllis	Zee	Northwestern Univ., Neurobiology	05/01/2011	

### **DIRECTORS**

(3)

First Name	Last Name	Home Department	Appt. Date	Appt. End
Stuart	Brody	Biological Sciences	7/1/2009	6/30/2010
Susan	Golden	Biological Sciences	7/1/2009	6/30/2014
David	Welsh	Psychiatry	7/1/2010	6/30/2014

### **AFFILIATED FACULTY**

First Name	Last Name	Home Department	Affiliation Date	End Date
Joseph	Amaral	Corporate Office of Science & Technology, Johnson & Johnson	05/01/2011	
Sonia	Ancoli-Israel	PSYCHIATRY	07/01/2009	
William	Bechtel	PHILOSOPHY	07/01/2009	
Gene	Block	UCLA, Physiological Science	05/01/2011	
Stuart	Brody	DIV BIOLOGICAL	07/01/2009	
Joanne	Chory	DIV BIOLOGICAL	07/01/2009	
Colleen	Doherty	DIV BIOLOGICAL		
Sean	Drummond	PSYCHIATRY	07/01/2009	
Jeffrey	Elliott	PSYCHIATRY	07/01/2009	
Ronald	Evans	DIV BIOLOGICAL	07/01/2009	
Sylvia	Evans	SCH PHARM/PHARM	07/01/2009	
Susan	Golden	DIV BIOLOGICAL	07/01/2009	
Michael	Gorman	PSYCHOLOGY	07/01/2009	
Ralph	Greenspan	KAVLI INST BRAI	07/01/2009	
Jeff	Hasty	DIV BIOLOGICAL	07/01/2009	
Alexander	Hoffmann	CHEMISTRY	05/01/2011	
Andrew	Huberman	NEUROBIOLOGY	01/01/2011	
Terence	Hwa	PHYSICS	07/01/2009	
William	Joiner	PHARMACOLOGY	07/01/2009	
Alexander	Kauffman	REPRO MED	07/01/2009	
Steve	Kay	Univ of Southern California	07/01/2012	
John	Kelsoe	PSYCHIATRY	09/01/2011	
Daniel	Kripke	PSYCHIATRY	07/01/2009	
Katja	Lamia	TSRI, Chemical Physiology and Molecular Medicine	09/01/2010	
Andy	LiWang	UC Merced, Quantitative and Systems Biology	09/01/2010	
Michael	McCarthy	Department of Psychiatry	05/01/2011	
Sara	Mednick	PSYCHIATRY	07/01/2009	
Pamela	Mellon	REPRO MED	07/01/2009	
Margaret	Moline	Purdue Pharma L.P.		
Marc	Montminy	DIV BIOLOGICAL	07/01/2009	
Caroline	Nievergelt	PSYCHIATRY	05/01/2011	
Satchidananda	Panda	DIV BIOLOGICAL	07/01/2009	
Barbara	Parry	PSYCHIATRY	07/01/2009	
Carrie	Partch	UC Santa Cruz	07/01/2012	
Jose	Pruneda-Paz	DIV BIOLOGICAL	07/01/2009	
Timothy	Rickard	PSYCHOLOGY	07/01/2009	
Nikolai	Rulkov	BioCircuits Institute	11/01/2010	
Terry	Sejnowski	DIV BIOLOGICAL	09/01/2010	

Nicholas	Spitzer	DIV BIOLOGICAL	05/01/2012
Joseph	Takahashi	Univ. Texas Southwestern, Neurosciences	05/01/2011
Lev	Tsimring	BioCircuits Institute	07/01/2010
David	Welsh	PSYCHIATRY	07/01/2009
Michael	Young	Rockefeller University, Academic Affairs and Genetics	05/01/2011
Phyllis	Zee	Northwestern Univ., Neurobiology	05/01/2011

#### **RESEARCHERS**

(21)

First Name	Last Name	Payroll Title	Appt. Date	End Date
Adele	Abrahamsen	Project Scientist (Non-Business/Engineering)	07/01/2009	_
Manuel	Campos	Assistant Research Scientist (Non-Business/Engineering)	04/27/2011	
Amandine	Chaix	Associate Research Scientist (Non-Business/Engineering)	09/20/2011	
Anne-Laure	Huber	Associate Research Scientist (Non-Business/Engineering)	01/06/2012	
Earl	Kang	Associate Research Scientist (Non-Business/Engineering)	07/05/2011	
Takeo	Katsuki	Assistant Project Scientist (Non-Business/Engineering)	07/01/2009	
Sheena	Keding	Research Scientist (Non-Business/Engineering)	07/01/2009	06/30/2012
Claudia	Lainscsek	Assistant Project Scientist (Non-Business/Engineering)	09/29/2011	
Susan	Lawton	Project Scientist (Non-Business/Engineering)	02/19/2010	11/01/2012
Hiep	Le	Assistant Research Scientist (Non-Business/Engineering)	07/01/2009	
Lee	Lichter	Assistant Research Scientist (Non-Business/Engineering)	01/06/2012	
Lianqi	Liu	Associate Project Scientist (Non-Business/Engineering)	07/01/2009	
Jeanne	Maglione	Assistant Specialist	07/01/2009	
Genevieve	McConnell	Associate Research Scientist (Business/Engineering)	01/09/2013	
Elizabeth	McDevitt	Research Scientist (Non-Business/Engineering)	04/27/2011	
Charles	Meliska	Associate Project Scientist (Non-Business/Engineering)	07/01/2009	
Loki	Natarajan	Associate Specialist	07/01/2009	
Stephanie	Рарр	Research Scientist (Non-Business/Engineering)	09/01/2010	
Stephanie	Ravelo	Associate Research Scientist (Non-Business/Engineering)	07/05/2011	10/01/2012
Lexie	Wang	Assistant Research Scientist (Non-Business/Engineering)	09/28/2011	
Susanna	Wang	Assistant Specialist	07/01/2009	10/01/2012

# **POST DOCS**

(54)

First Name	Last Name	Payroll Title	Appt. Date	End Date
Dawn	Adin	Postdoctoral Scholar-Employee	07/01/2009	09/01/2011

Sophie	Aimon	Postdoctoral Scholar-Employee	09/27/2012	
Kenyon	Applebee	Postdoctoral Scholar-Fellow	06/30/2011	
Bridget	Baumgartner	Postdoctoral Scholar-Employee	07/01/2009	
Stephen	Beesley	Postdoctoral Scholar-Employee	04/12/2011	
Katia	Bonaldi	Postdoctoral Scholar-Employee	07/05/2011	
Juliana	Bordowitz	Postdoctoral Scholar-Fellow	07/01/2009	
Bart	Borek	Postdoctoral Scholar-Employee	01/03/2012	
Joseph	Boyd	Postdoctoral Scholar-Employee	10/11/2011	
Melissa	Brayman	Postdoctoral Scholar-Employee	06/30/2011	01/03/2012
John	Buchner	Postdoctoral Scholar-Employee	07/01/2009	09/01/2011
Marcela	Carvallo-Pinto	Postdoctoral Scholar-Employee	07/01/2009	10/01/2012
You	Chen	Postdoctoral Scholar-Employee	02/19/2013	
Brenda	Chow	Postdoctoral Scholar-Employee	04/27/2011	10/01/2012
Susan	Cohen	Postdoctoral Scholar-Fellow	07/01/2009	
Andriy	Didovyk	Postdoctoral Scholar-Employee	12/13/2011	
Stacie	Dilks	Postdoctoral Scholar-Employee	12/28/2011	10/01/2012
Luciano	DiTacchio	Postdoctoral Scholar-Employee	07/01/2009	06/30/2012
Colleen	Doherty	Postdoctoral Scholar-Employee	07/01/2009	
Erin	Dunn	Postdoctoral Scholar-Employee	06/29/2011	11/28/2011
Joshua	Gendron	Postdoctoral Scholar-Employee	07/01/2009	
Christine	Glidewell-Kenney	Postdoctoral Scholar-Employee	06/30/2011	
Megumi	Hatori	Postdoctoral Scholar-Employee	07/01/2009	
Anne	Helfer	Postdoctoral Scholar-Employee	07/01/2009	05/03/2012
Tsuyoshi	Hirota	Postdoctoral Scholar-Employee	07/01/2009	
Hanne	Hoffmann	Postdoctoral Scholar-Employee	06/30/2011	
Meng	Jin	Postdoctoral Scholar-Employee	09/28/2012	
Sabine	Jordan	Postdoctoral Scholar-Employee	06/29/2011	
Minsu	Kim	Postdoctoral Scholar-Employee	07/01/2009	
Yong Ick	Kim	Postdoctoral Scholar-Fellow	07/01/2009	
Elsebeth	Kolmos	Postdoctoral Scholar-Employee	07/01/2009	
Dominic	Landgraf	Postdoctoral Scholar-Employee	01/06/2012	
Andrea	Manzo	Postdoctoral Scholar-Employee	09/27/2012	
William	Mather	Postdoctoral Scholar-Employee	07/01/2009	
Faruck	Morcos	Postdoctoral Scholar-Employee	07/01/2010	
Ludovic	Mure	Postdoctoral Scholar-Employee	03/29/2011	
Dawn	Nagel	Postdoctoral Scholar-Employee	07/01/2009	
Marian	Nohales Zafra	Postdoctoral Scholar-Employee	05/11/2012	10/01/2012
Dmitri A	Nusinow	Postdoctoral Scholar-Employee	07/01/2009	06/01/2013
Henry	Orff	Postdoctoral Scholar-Fellow	07/01/2009	

Mariko	Sawa	Postdoctoral Scholar-Employee	07/01/2009	10/01/2012
Erica	Schoeller	Postdoctoral Scholar-Employee	08/30/2013	
Glen	Seidner	Postdoctoral Scholar-Employee	02/09/2011	
Sheila	Semaan	Postdoctoral Scholar-Employee	07/01/2009	
Ryan	Shultzaberger	Postdoctoral Scholar-Employee	07/01/2009	
Ryan	Simkovsky	Postdoctoral Scholar-Employee	04/26/2011	
Tim	Sonntag	Postdoctoral Scholar-Employee	07/05/2011	10/01/2012
Gabriele	Sulli	Postdoctoral Scholar-Employee	11/30/2012	
Arnaud	Taton	Postdoctoral Scholar-Employee	04/26/2011	
Francisco	Uribe Romeo	Postdoctoral Scholar-Employee	11/30/2012	
Meilin	Wu	Postdoctoral Scholar-Employee	07/01/2009	
Huimin	Xie	Postdoctoral Scholar-Employee	06/30/2011	
Amir	Zarrinpar	Postdoctoral Scholar-Employee	04/27/2011	
Xuan	Zhao	Postdoctoral Scholar-Employee	07/11/2013	

# STAFF

(27)

First Name	Last Name	Payroll Title	Start Date	End Date
Anna	Bree	Staff Research Assoc II	07/01/2009	09/01/2011
Kellie Breen	Church	Assistant I	06/30/2011	
Daniel	Clark	Assistant I	07/01/2009	
Sangeeta	Dhamija	Staff Research Assoc II	07/01/2009	
Tanja	Diemer	Staff Research Assoc II	07/27/2011	
Elizabeth	Hamilton	Staff Research Assoc II	07/01/2009	10/01/2012
Stacey	Huynh	Assistant III	11/18/2009	09/18/2011
Darae	Jun	Assistant Iv	04/26/2011	08/10/2013
Joshua	Kim	Staff Research Assoc II	06/30/2011	
Jonathan	Lam	Assistant III	04/26/2011	11/10/2011
Yvonne	Lee	Assistant III	03/12/2013	
Sunamita	Leming	Staff Research Assoc II	06/30/2011	
Ana M.	Lopez	Staff Research Assoc II	07/01/2009	
Patricia	Magallanez	Admin. Specialist	01/20/2010	99/99/9999
Luis Fernando	Martinez	Staff Research Assoc II	07/01/2009	
Jason	Meadows	Staff Research Assoc II	06/30/2011	
Natalia	Navarro Moreno	Staff Research Assoc II	07/05/2011	10/01/2012
Takako	Noguchi	Assistant I	07/01/2009	
Mark	Paddock	Assistant I	11/11/2011	

Terry	Peters	Management Services Officer II	7/1/2009	99/99/9999
Lily	Quiroz	Staff Research Assoc I	07/01/2009	11/01/2012
Diane	Sorenson	Staff Research Assoc I	07/01/2009	
Jonathan	Sun	Laboratory Asst II	03/18/2013	
Blake	Trial	Staff Research Assoc I	07/01/2009	
Jenee	Wagner	Assistant I	07/01/2009	
Connie	Wang	Staff Research Assoc II	07/01/2009	09/01/2011
Heather (Hongbing)	Wei	Staff Research Assoc II	01/07/2012	

#### **STUDENTS**

(49)

First Name	Last Name	Home Department	Status		End Date
Ann	Atwood	Div Biological Sciences	Graduate Student Volunteer	07/01/2009	10/01/2012
Julie	Avanzino	Department of Psychiatry	Undergraduate	01/07/2012	
Daniel	Burnston	Philosophy	Graduate Student Volunteer	07/29/2011	
Jason	Chen	Div Biological Sciences	Undergraduate	06/29/2011	
Natalie	Cookson	BioCircuits Institute	Graduate Student Volunteer	07/01/2009	
Anthony	Daulo	Div Biological Sciences	Undergraduate	07/01/2009	12/30/2012
Barrett	Deris	Division of Physical Sciences	Graduate Student Volunteer	07/01/2009	
Keval	Desai	Div Biological Sciences	Undergraduate	04/26/2011	
Spencer	Diamond	Div Biological Sciences	Graduate Student Volunteer	04/26/2011	
Malcom	Fernandes	Psychiatry	Undergraduate	06/29/2011	
Mike	Ferry	BioCircuits Institute	Graduate Student Volunteer	07/01/2009	
Shubhroz	Gill	Salk Institute	Graduate Student Volunteer	07/01/2009	
Paula	Gitis	Psychiatry	Undergraduate	01/27/2011	10/01/2012
Andrew	Gross	Bioinformatics Department	Undergraduate	01/07/2012	10/01/2012
Elizabeth	Harrison	Psychology	Graduate Student Volunteer	07/01/2009	
Michelle	Hoang	Div Biological Sciences	Undergraduate	04/26/2011	
Polly	Huang	Reproductive Medicine	Graduate Student Volunteer	06/30/2011	
Jeremy	Johnson	Department of Psychology	Undergraduate	02/07/2012	
Darae	Jun	Div Biological Sciences	Undergraduate	04/26/2011	
Shannon	Kang	Div Biological Sciences	Undergraduate	06/29/2011	
Azim	Khan	Psychology & Reproductive Medicine	Graduate Student Volunteer	07/01/2009	
David	Kochman	Pharmacology	Graduate Student Volunteer	06/29/2011	
Martin	Kolnik	Bioengineering	Graduate Student Volunteer	07/01/2009	
Stephen	Leung	Div Biological Sciences	Undergraduate	04/26/2011	
Joyce	Luke	Bioengineering	Graduate Student Volunteer	07/01/2009	

Zachary	Marnoy	Department of Psychiatry	Undergraduate	01/24/2012	
Ben	McKenna	Psychiatry	Graduate Student Volunteer	07/01/2009	
Octavio	Mondragon	Bioengineering	Graduate Student Volunteer	07/01/2009	
Ariel	Neikrug	Psychiatry	<b>Graduate Student Volunteer</b>	07/01/2009	02/30/2013
Jeff	Nelson	Div Biological Sciences	<b>Graduate Student Volunteer</b>	07/01/2009	06/01/2013
Matthew	Poling	Reproductive Medicine	<b>Graduate Student Volunteer</b>	07/01/2009	
Pagkapol	Pongsawakul	Div Biological Sciences	<b>Graduate Student Volunteer</b>	07/01/2009	
Qays	Poonawala	Department of Psychology	Undergraduate	11/22/2011	
Arthur	Prindle	Bioengineering	<b>Graduate Student Volunteer</b>	07/01/2009	
Evan	Raiewski	Psychology	<b>Graduate Student Volunteer</b>	07/01/2009	
lvan	Razinkov	Bioengineering	<b>Graduate Student Volunteer</b>	07/01/2009	
Jim	Robinson	Pharmacology	<b>Graduate Student Volunteer</b>	06/29/2011	
Jangir	Selimkhanov	Bioengineering	Undergraduate	07/01/2009	
Benjamin	Sheredos	Philosophy	<b>Graduate Student Volunteer</b>	07/01/2009	
Susan	Sinning	Psychology	Graduate Student Volunteer	07/01/2009	
Ruichen	Sun	Kavli Inst for Brain & Mind	Graduate Student Volunteer	09/27/2012	
Karen	Tang	Div Biological Sciences	Undergraduate	06/29/2011	
Brooks	Taylor	Bioengineering	Graduate Student Volunteer	07/01/2009	
Andrewston	Ting	Div Biological Sciences	Undergraduate	06/29/2011	
Minh	Tong	Kavli Inst for Brain & Mind	Undergraduate	07/01/2009	
Federico	Unglaub	Div Biological Science	Graduate Student Paid	11/30/2012	
Shabnam	Vahidpour	Department of Pharmacology	Graduate Student Volunteer	01/07/2012	
Emily	Witham	Reproductive Medicine	Graduate Student Volunteer	06/30/2011	11/01/2012
Simone	Yassear	Div Biological Sciences	Undergraduate	06/29/2011	

# **VISITORS**

(9)

	(3)			
First Name	Last Name	Home Institution	Begin Date	<b>End Date</b>
Rozi	Andretic	Croatia	03/12/2012	_
Javier	Espinosa	Universidad de Alicante - Spain	06/05/2013	09/02/2013
Gena	Glickman	Naval Health Research Center (NHRC)	05/14/2013	
Maria Jose	Iglesias Sanchez	Centro Universitario De Plasencia, Spain	06/18/2012	09/30/2012
Yohko	Kitayama	Nagoya University, Japan	10/01/2010	11/30/2010
Martin	Mulligan	Memorial University of Newfoundland, Canada	03/01/2012	03/20/2012
Michael	Rae	University of Houston	01/01/2011	06/01/2011
Suzette	Ruiz	Volunteer with Dept of Psychiatry, UCSD	06/29/2011	
Jun	Zhang	Xiamen University, China	01/24/2012	02/24/2013

#### **ORGANIZATION CHART**

# UC San Diego Center for Chronobiology Organization Chart



#### **PPS Head Count**

	2011	2012	2013
Career Staff	2	2	2
Graduate Students	2	2	2
Other - In Residence	0	0	0
Other Academics	0	0	1
Postdoc Fellow/Postdoc Grad Res	5	8	7
Regular Faculty	0	0	0
Researchers	0	0	1
TA/Reader/Tutor	0	0	0
Temp Faculty	0	0	0
Temporary Staff	1	3	5
Total	10	15	18

# **FACILITIES**

	2010	2011	2012	2013
Academic Office	755	755	755	
Administrative Office	281	281	281	281
Conference Room	270	270	270	270
Research Lab / Studio Service	454	454	454	
Research Laboratory / Studio	7,657	7,657	7,657	
Research Office	2,170	2,170	2,170	
Research Office Service	195	195	195	
Study Room	786	786	786	
Totals (assignable sq. ft.)	551	12,568	12,568	12,568

# **INCOME**

#### **Balance Forward**

2011	2012	2013	3 year avg.

418833	16,514	370,048	259,260	215,274
— Oru-Center For Chronobiology				
Total	16,514	370,048	259,260	\$661,443

# **Permanent Budget**

	2010	2011	2012	2013	Total
418833	85,000	85,000	86,350	63,177	319,527
— Oru-Center For Chronobiology					
Total	85,000	85,000	86,350	63,177	\$319,527

#### **Transfers**

	2013	Total
418833	99,100	99,100
Total	99,100	\$99,100

#### **Contract and Grant Allocations - Unit Code: 432**

#### Direct and Indirect Costs by Year - Unit Code: 432

	Transactions	Direct	Indirect	Total
2013	9	871,841	399,569	1,271,410
2012	1	200,000	109,750	309,750
2011	1	200,000	109,000	309,000
2010	0	0	0	0
Totals	11	1,271,841	618,319	\$ 1,890,160

#### Sponsor Category Totals - Unit Code: 432

	Transactions	Direct	Indirect	Total
Federal	10	1,221,841	618,319	1,840,160
Other Charitable	1	50,000	0	50,000
Interest Group	0	0	0	0
Higher Education	0	0	0	0
UC Campus	0	0	0	0
Foundation	0	0	0	0

	0	0	0	0
Other Government	0	0	0	0
Business	0	0	0	0
State	0	0	0	0
DOE Labs	0	0	0	0
Totals	11	1,271,841	618,319	\$ 1,890,160

# **User Reported Income**

	418833	Total
CEC contract-fund 18797A - 2012	50,000	50,000
CEC contract-fund 18797A - 2013	36,000	36,000
DOE grant-fund 28475A - 2011	154,500	154,500
DOE grant-fund 28475A - 2012	154,750	154,750
DOE grant-fund 28475A - 2013	70,544	70,544
Fellowships	0	0
Fellowships - 2011	75,000	75,000
Fellowships - 2012	102,090	102,090
Gifts	0	0
Gifts - 2011	52,810	52,810
Gifts - 2012	17,390	17,390
Gifts - 2013	6,580	6,580
Life Technologies contract-fund 87925A - 2012	143,717	143,717
Other income	0	0
Registration fees - 2012	3,733	3,733
Registration fees - 2013	8,829	8,829
Service Agreements	0	0
Service Agreements - 2011	О	0
Service Agreements - 2012	О	0
Totals	875,943	\$ 875,943

# **EXPENSE**

### **Expense Summary**

	418833	Total
Academic Salaries	735,397	735,397
Benefits	352,688	352,688

Equipment	57,182	57,182
General Assistance	31,489	31,489
Indirect Costs	607,417	607,417
Recharge Income	0	0
Staff Salaries	331,244	331,244
Supplies	336,645	336,645
Transfers In	3,676	3,676
Travel	86,887	86,887
Totals	2,542,625	\$ 2,542,625

#### **Expense By Program**

	2010	2011	2012	2013	Total
Core Account Research	110,499	420,868	940,785	1,138,130	2,610,281
General Instruction	0	0	1,263	(1,612)	(349)
Totals	110,499	420,868	942,048	1,136,518	\$2,609,932

#### **EVENTS**

#### SEMINARS (59)

Title: The Transcriptional Repressor DEC2 Regulates Sleep Length in Mammals

Date: 2009-10-01 Presenter(s): Dan Kripke

**Location:** UCSD Liechtag, 2A05

Title: Diurnally Entertained Anticipatory Behavior in Archaea

Date: 2009-10-15
Presenter(s): Colleen Doherty
Location: Leichtag 2A05

Title: Dissociation of Circadian and Light Inhibition of Melatonin Release Through Forced Desynchronization in the Rat

Date: 2009-11-05
Presenter(s): Gena Glickman
Location: Leichtag 2A05

Title: Cyanobacterial Daily Life with Kai-based Circadian and Diurnal Genome-Wide Transcriptional Control in Synechococcus elongatus

Date: 2009-11-19
Presenter(s): John Buchner
Location: Leichtag 2A05

Title: AMPK Regulates the Circadian Clock by Cryptochrome Phosphorylation and Degradation

**Date:** 2009-12-03

Presenter(s): Yhew Pongsawakul

**Location:** Leichtag 2A05

Title: Circadian Rhythms in Neurospora crassa: Dynamics of the Clock Component Frequency Visualized Using a Fluorescent Reporter

Date: 2009-12-17
Presenter(s): Michael Ferry
Location: Leichtag 2A05

Title: Correlation with Behavioral Activity and Rest Implies Circadian Regulation by SCN Neuronal Activity Levels

Date: 2010-01-07

Presenter(s): Michael Gorman

Location: Leichtag 2A05

**Title:** The Implications of Multiple Circadian Clock Origins

Date: 2010-01-21

Presenter(s): Ralph Greenspan
Location: Leichtag 2A05

Title: Millisecond Light Pulses Make Mice Stop Running, then Display Prolonged Sleep-Like Behavior in the Absence of Light

Date: 2010-02-04

Presenter(s): Jeff Elliott

Location: Leichtag 2A05

Title: Elevated ATPase Activity of KaiC Applies a Circadian Checkpoint on Cell Division in Synechococcus elongatus

Date: 2010-02-18

Presenter(s): Guogang Dong
Location: Leichtag 2A05

Title: Small-World Network Models of Intercellular Coupling Predict Enhanced Synchronization in the Suprachiasmatic Nucleus

Date: 2010-03-04

Presenter(s): Bill Bechtel

Location: Leichtag 2A05

**Title:** The methamphetamine-sensitive circadian oscillator does not employ canonical clock genes

Date: 2010-04-04

Presenter(s): Mike McCarthy
Location: Leichtag 2A05

Title: Animal cryptochromes mediate magnetoreception by an unconventional photochemical mechanism

Date: 2010-04-15

Presenter(s): Ann Atwood

Location: Leichtag 2A05

Title: Genetic suppression of the circadian Clock mutation by the melatonin biosynthesis pathway

Date: 2010-05-06

Presenter(s): Evan Raiewski
Location: Leichtag 2A05

Title: PSEUDO-RESPONSE REGULATORS 9, 7, and 5 Are Transcriptional Repressors in the Arabidopsis Circadian Clock

Date: 2010-05-20

Presenter(s): Colleen Doherty
Location: Leichtag 2A05

Title: Circadian Clock Gene Bmal1 Is Not Essential; Functional Replacement with its Paralog, Bmal2

Date: 2010-06-03

Presenter(s): Takako Noguchi
Location: Leichtag 2A05

Title: Disruption of the clock components CLOCK and BMAL1 leads to hypoinsulinaemia and diabetes

Date: 2010-10-07
Presenter(s): Katja Lamia
Location: AP&M, 2840

Title: Widespread Changes in Synaptic Markers as a Function of Sleep and Wakefulness in Drosophila

Date: 2010-10-21
Presenter(s): Bill Joiner
Location: AP&M, 2840

Title: Enhanced phase and period control of mammalian circadian rhythms with manipulations of rhythm waveform

Date: 2010-11-04
Presenter(s): Jeff Elliott
Location: AP&M, 2840

**Title:** Dual KaiC-based oscillations constitute the circadian system of cyanobacteria

Date: 2010-11-18

Presenter(s): Yohko Kitayama
Location: AP&M, 2840

Title: 1. Reproductive biology of female Bmal1 null mice. 2. Impaired Steroidogenesis and Implantation Failure in Bmal1-/- Mice.

Date: 2010-12-02

Presenter(s): Dan Clark

Location: AP&M, 2840

**Title:** Oscillations in supercoiling drive circadian gene expression in cyanobacteria

**Date:** 2010-12-16 **Presenter(s):** John Buchner **Location:** AP&M, 2840

**Title:** Perinatal photoperiod imprints the circadian clock

Date: 2011-01-06

Presenter(s): Michael Gorman

Location: AP&M, 2840

Title: Three major output pathways from the KaiABC-based oscillator cooperate to generate robust circadian kaiBC expression in cyanobacteria

Date: 2011-01-20
Presenter(s): Ralph Greenspan
Location: AP&M, 2840

Title: Noninvasive method for assessing the human circadian clock using hair follicle cells

**Date:** 2011-02-03

Presenter(s): Yhew Pongsawakul

Location: AP&M, 2840

**Title:** Temperature as a universal resetting cue for mammalian circadian oscillators

Date: 2011-03-03

Presenter(s): Takako Noguchi
Location: AP&M, 2840

**Title:** Photoadaptation in Neurospora by Competitive Interaction of Activating and Inhibitory LOV Domains

Date: 2011-03-17

Presenter(s): Dmitri A. Nusinow

Location: AP&M, 2840

Title: Delay in Feedback Repression by Cryptochrome 1 Is Required for Circadian Clock Function

**Date:** 2011-04-07

Presenter(s): Luciano DiTacchio Location: AP&M, 2840

**Title:** New ideas from an old "timer"

Date: 2011-04-21
Presenter(s): Stu Brody
Location: AP&M, 2840

Title: Light-Driven Changes in Energy Metabolism Directly Entrain the Cyanobacterial Circadian Oscillator

Date: 2011-05-12
Presenter(s): Julie Bordowitz

Location:

Title: Specific Role of VTA Dopamine Neuronal Firing Rates and Morphology in the Reversal of Anxiety-Related, but not Depression-Related Behavior in the Clock?19 Mouse

Model of Mania

Date: 2011-05-19
Presenter(s): Mandy Sinning

Location:

**Title:** A blind circadian clock in cavefish reveals that opsins mediate peripheral clock photoreception

Date: 2011-10-05
Presenter(s): David Welsh
Location: AP&M, 2840

Title: Flexibility of the C-terminal, or CII, ring of KaiC governs the rhythm of the circadian clock of cyanobacteria

Date: 2011-10-19
Presenter(s): Yong-Ick Kim
Location: AP&M, 2840

**Title:** Development, maturation, and necessity of transcription factors in the mouse suprachiasmatic nucleus

Date: 2011-11-02
Presenter(s): Dan Clark
Location: AP&M, 2840

**Title:** Evolutionary principles of design in the cyanobacterial clock

**Date:** 2011-11-16

Presenter(s): Rama Ranhanathan

Location: AP&M, 2840

**Title:** The period of the circadian oscillator is primarily determined by the balance between casein kinase 1 and protein phosphatase 1

Date: 2011-12-07
Presenter(s): Stephen Beesley
Location: AP&M, 2840

**Title:** Tuning the mammalian circadian clock: robust synergy of two loops

Date: 2012-01-04
Presenter(s): Bill Bechtel
Location: AP&M, 2840

**Title:** Timing of plant immune responses by a central circadian regulator

Date: 2012-01-18
Presenter(s): Anne Helfer
Location: AP&M, 2840

**Title:** A molecular mechanism for circadian clock negative feedback

**Date:** 2012-02-01

Presenter(s): Yhew Pongsawakul

**Location:** AP&M, 2840

Title: NaV1.1 channels are critical for intercellular communication in the suprachiasmatic nucleus and for normal circadian rhythms

Date: 2012-03-07

Presenter(s): Takako Noguchi
Location: AP&M, 2840

**Title:** Arabidopsis circadian clock protein, TOC1, is a DNA-binding transcription factor

Date: 2012-03-21

Presenter(s): Joshua Gendron
Location: AP&M, 2840

Title: Circadian transcriptional regulation by the posttranslational oscillator without de novo clock gene expression in Synechococcus

Date: 2012-04-19
Presenter(s): Susan Cohen
Location: AP&M, 2840

Title: Two papers will be presented: A molecular switch for photoperiod responsiveness in mammals AND Acute induction of Eya3 by late-night light stimulation triggers TSHbeta

expression in photoperiodism

Date: 2012-05-03

Presenter(s): Dan Kripke
Location: AP&M, 2840

**Title:** Phase-dependent generation and transmission of time information by the KaiABC circadian clock oscillator through SasA-KaiC interaction in cyanobacteria

Date: 2012-05-17

Presenter(s): Julie Bordowitz
Location: AP&M, 2840

**Title:** Nature paper about evolutionary conservation of peroxiredoxin rhythms

Date: 2012-06-07

Presenter(s): Tanja Diemer
Location: AP&M, 2840

**Title:** Circadian rhythm of redox state regulates excitability in suprachiasmatic nucleus neurons

Date: 2012-10-04
Presenter(s): Takako Noguchi

Location:

**Title:** Rhythmic ring?ring stacking drives the circadian oscillator clockwise

Date: 2012-10-18
Presenter(s): Yong-Ick Kim

Location:

Title: Circadian-related heteromerization of adrenergic and dopamine D(4) receptors modulates melatonin synthesis and release in the pineal gland

**Date:** 2012-11-04

Presenter(s): Dominic Landgraf

Location:

Title: Ultraviolet light provides a major input to non-image-forming light detection in mice

Date: 2012-12-06

Presenter(s): Michael Gorman

Location:

**Title:** Specificity and pleiotropy in genetic effects on the clock

Date: 2013-01-10
Presenter(s): Ralph Greenspan

Location:

Title: Circadian regulation of olfaction and an evolutionarily conserved, nontranscriptional marker in Caenorhabditis elegans

Date: 2013-01-17
Presenter(s): Joseph Boyd

Location:

Title: Topological specificity and hierarchical network of the circadian calcium rhythm in the suprachiasmatic nucleus

Date: 2013-02-07
Presenter(s): Dan Burnston

Location:

Title: Transcriptional corepressor TOPLESS complexes with pseudoresponse regulator proteins and histone deacetylases to regulate circadian transcription

Date: 2013-02-21

Presenter(s): Federico Unglaub

Location:

Title: Effect of network architecture on synchronization and entrainment properties of the circadian oscillations in the suprachiasmatic nucleus

Date: 2013-03-07 Presenter(s): Bill Bechtel

Location:

Title: Circadian clock adjustment to plant iron status depends on chloroplast and phytochrome function AND Iron is involved in the maintenance of circadian per

**Date:** 2013-03-21

Presenter(s): Colleen Doherty

Location:

Title: Non-optimal codon usage affects expression, structure and function of clock protein FRQ. and Non-optimal codon usage is a mechanism to achieve circadian cloc

Date: 2013-04-18
Presenter(s): Susan Cohen

Location:

**Title:** Scientific diagrams as traces of group-dependent cognition: A brief cognitive-historical analysis

Date: 2013-05-02

Presenter(s): Ben Sheredos

Location:

**Title:** The photoperiodic regulation of circadian photic phase response curves

**Date:** 2013-05-16

Presenter(s): Jeff Elliott

Location:

Title: A Gq-Ca2+ Axis Controls Circuit-Level Encoding of Circadian Time in the Suprachiasmatic Nucleus

Date: 2013-06-06
Presenter(s): Tanja Diemer

Location:

### LECTURES (0)

# CONFERENCES (9)

**Title:** Mini-Symposium on Circadian Rhythms

**Date:** 2009-10-23

Presenter(s): Susan Golden-UCSD, David Welsh-UCSD, Ying-Hui Fu-UCSF, Joanne Chory-Salk, Satchin Panda-Salk, Steve Kay-UCSD, and Ron Evans-Salk

**Location:** Frederic de Hoffman Auditorium, Salk Institute for Biological Studies

**Title:** Mini-Symposium on Circadian Rhythms

**Date:** 2009-11-13

Presenter(s): Stu Brody-UCSD, Michael Gorman-UCSD, Sasha Kauffman-UCSD, Sonia Ancoli-Israel-UCSD, William Bechtel-UCSD, Barbara Parry-UCSD, Timothy Rickard-UCSD, Jeff

Hasty-UCSD, and Susan Golden-UCSD

**Location:** Atkinson Pavilion, UCSD Faculty Club

**Title:** CCB Symposium: From Cells to the Clinic

**Date:** 2010-05-10

Presenter(s): H.de la Iglesia, F.Doyle, J.Dunlap, R.Greenspan, S.Harmer, L.Hasher, J.Hasty, S.Hattar, E.Herzog, S.Kay, E.Klerman, C.R.McClung, R.Nelson, M.Nitabach, E.O'Shea, P.Sassone-

Corsi, and P.Zee

**Location:** Institute of the Americas, UCSD

Title: CCB Fall Workshop on Biological Timing

**Date:** 2010-11-08

Presenter(s): William Joiner-UCSD, John Buchner-UCSD, Katja Lamia-SRI, Terry Hwa-UCSD, Luciano DiTacchio-Salk, Gena Glickman-UCSD, Sean Drummond-UCSD, Takako Noguchi-UCSD,

Lev Tsimring-UCSD, Dmitri Nusinow-UCSD, an

**Location:** UCSD Faculty Club - Atkinson Pavilion

Title: CCB Symposium: From Cells to Clinic February 9-11, 2011

**Date:** 2011-02-09

Presenter(s): Deborah Bell-Pedersen-Texas A&M Univ., Susan Golden-UCSD, Andrew Millar-Univ. of Edinburgh, Satchin Panda-Salk, Chris Colwell-UCLA, Alec Davidson-Morehouse SOM,

John O'Neill-Univ. of Cambridge, David

**Location:** Institute of Americas, UCSD

Title: CCB Fall Workshop on Biological Timing

**Date:** 2011-11-09

Presenter(s): B.Deris, A.Neikrug, M.McCarthy, C.Lainscsek, J.Maglione, C.Nievergelt, C.Doherty, B.McKenna, E.Tobin, S.Ancoli-Israel, S.Golden, S.Brody, S.Kay

Location: Leichtag Biomedical Bldg. Rm 107 - School of Medicine Campus, UCSD

**Title:** CCB Symposium: From Cells to Clinic Feb 15-17, 2012

**Date:** 2012-02-15

Presenter(s): A.Webb, A.Huberman, A.LiWang, G.Block, H.Ueda, R.Anafi, J.Takahashi, K.Obrietan, K.Lamia, M.Rosekind, M.Carskadon, M.Harrington, M.Gorman, M.Young, R.Tsien,

S.Mednick, S.Brown, Y.Liu

**Location:** Institute of Americas, UCSD

Title: CCB Fall Workshop on Biological Timing

**Date:** 2012-11-16

Presenter(s): S.Gill, M.Hatori, H.Tsuyoshi, J.Kelsoe, S.Beesley, A.Prindle, S.Golden, C.Partch, J.Gendron, Y.Kim, P.Bourne, N.Spitzer

Location:

Title: CCB Symposium: From Cells to Clinic Feb 13-15, 2013

**Date:** 2013-02-13

Presenter(s): m.Brunner, J.Pruneds-Paz, M.Do, L.Ptachek, C.Doherty, M.Rust, S.Drummond, U.Schibler, J.Duffy, W.Schwartz, F.Gage, A.Sehgal, C.Green, N.Spitzer, A.Hoffmann, P.Taghert,

C.McClung, D.Welsh

Location:

### OTHER (4)

Title: Faculty Club Lunch Meetings to Introduce the Center for Chronobiology to CCB Faculty Members

**Date:** 2009-09-09

Presenter(s): Susan Golden and Stu Brody

**Location:** Faculty Club

Title: Faculty Club Lunch Meetings to Introduce the Center for Chronobiology to CCB Faculty Members

**Date:** 2009-09-17

**Presenter(s):** Susan Golden and Stu Brody

**Location:** Faculty Club

**Title:** Reception for CCB Research Staff

**Date:** 2009-12-02

**Presenter(s):** Susan Golden and Stu Brody

**Location:** Mandeville Suite, Tioga Hall, UCSD

Title: CCB Open House

**Date:** 2010-07-20

Presenter(s): Hosted by: Susan Golden and Stu Brody

Location: AP&M, 2840

# **PUBLICATIONS**

# **JOURNALS** (441)

5 Year Review ? Journals (2009-2013)

A 12-Week, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Effect of Eszopiclone 2 Mg on Sleep/Wake Function in Older Adults with Primary and Comorbid Insomnia - S Ancoli-Israel, AD Krystal, WV McCall, K Schaefer, A Wilson, R Claus, R Rubens& T Roth (2010) In Sleep, Vol. 33, 225-234

A Computational Model for the Modulation of the Prepulse Inhibition of the Acoustic Startle Reflex - DF Ramirez-MorenoTJ Sejnowski (2012) In Biological Cybernetics, Vol. 106, 169-176

A Conserved Behavioral State Barrier Impedes Transitions between Anesthetic-Induced Unconsciousness and Wakefulness: Evidence for Neural Inertia - EB Friedman, Y Sun, JT Moore, HT Hung, QC Meng, P Perera, WJ Joiner, SA Thomas, RG Eckenhoff, A Sehgal& MB Kelz (2010) In Plos One, Vol. 5,

A Functional Genomics Approach Reveals Che as a Component of the Arabidopsis Circadian Clock - JL Pruneda-Paz, G Breton, A Para& SA Kay (2009) In Science, Vol. 323, 1481-1485

A Genome-Wide Association Study of Attempted Suicide - VL Willour, F Seifuddin, PB Mahon, D Jancic, M Pirooznia, J Steele, B Schweizer, FS Goes, FM Mondimore, DF MacKinnon, RH Perlis, PH Lee, J Huang, JR Kelsoe, PD Shilling, M Rietschel, M Nothen, S Cichon, H Gurling, S Purcell, JW Smoller, N Craddock, JR DePaulo, TG Schulze, FJ McMahon, PP Zandi, JB Potash& GSC Bi (2012) In Molecular Psychiatry, Vol. 17, 433-444

A Genome-Wide Association Study of Seasonal Pattern Mania Identifies Nf1a as a Possible Susceptibility Gene for Bipolar Disorder - HJ Lee, HG Woo, TA Greenwood, DF Kripke& JR Kelsoe (2013) In Journal of Affective Disorders, Vol. 145, 200-207

A Hormone-Dependent Module Regulating Energy Balance - B Wang, N Moya, S Niessen, H Hoover, MM Mihaylova, RJ Shaw, JR Yates, WH Fischer, JB Thomas& M Montminy (2011) In Cell, Vol. 145, 596-606

A Longitudinal Analysis of the Relations among Stress, Depressive Symptoms, Leisure Satisfaction, and Endothelial Function in Caregivers - BT Mausbach, E Chattillion, SK Roepke, MG Ziegler, M Milic, R von Kanel, JE Dimsdale, PJ Mills, TL Patterson, MA Allison, S Ancoli-Israel& I Grant (2012) In Health Psychology, Vol. 31, 433-440

A Model of the Cell-Autonomous Mammalian Circadian Clock - HP Mirsky, AC Liu, DK Welsh, SA Kay& FJ Doyle (2009) In Proceedings of the National Academy of Sciences of the United States of America, Vol. 106, 11107-11112

A Novel Allele of Kaia Shortens the Circadian Period and Strengthens Interaction of Oscillator Components in the Cyanobacterium Synechococcus Elongatus Pcc 7942 - Y Chen, YI Kim, SR Mackey, CK Holtman, A LiWang& SS Golden (2009) In Journal of Bacteriology, Vol. 191, 4392-4400

A Peroxisome Proliferator-Activated Receptor-Delta Agonist Provides Neuroprotection in the 1-Methyl-4-Phenyl-1,2,3, 6-Tetrahydropyridine Model of Parkinson's Disease - HL Martin, RB Mounsey, K Sathe, S Mustafa, MC Nelson, RM Evans& P Teismann (2013) In Neuroscience, Vol. 240, 191-203

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