

PLANT & MICROBIAL BIOLOGY

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Department Mourns the Loss of Sydney Kustu

Professor Emerita Sydney Kustu, a distinguished faculty member and renowned researcher in UC Berkeley's Department of Plant and Microbial Biology, died in Berkeley on March 18th, 2014. She was 71 years old. She was a member of the National Academy of Sciences and was instrumental in the revitalization of the field of microbiology on the Berkeley campus.

In addition to being a National Academy member, Kustu garnered a large number of other awards during her career at Berkeley. She was a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Academy of Microbiology. She also held a number of national and international professorships, including a prestigious Gauss Professorship at Universität Göttingen. For more than a decade, her work was supported by National Institutes of Health MERIT Awards.

All are invited to attend a Remembrance Gathering to honor Kustu, and her contributions to science and education, from 4-6 pm on Friday, May 2, at the Alumni House, UC Berkeley.

Read the full obituary: pmb.berkeley.edu

Find out more information about the Remembrance Gathering: ipmb.berkeley.edu

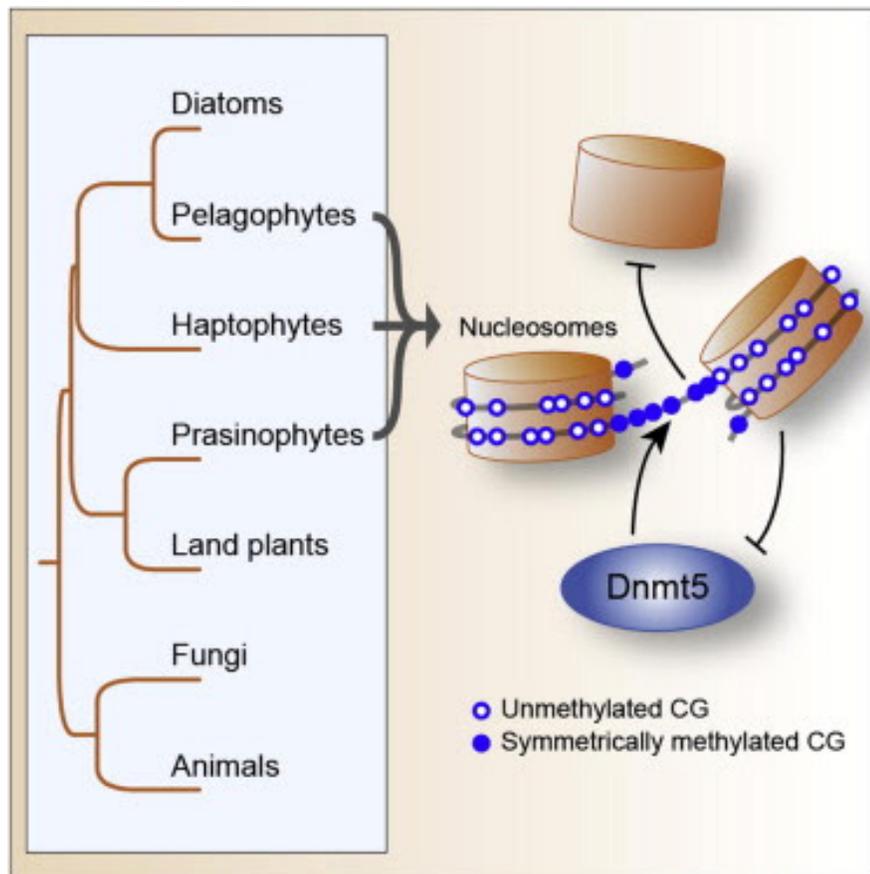
b-ready for bCourses

Learn New Class Management System at Koshland Hall Training Session

In Spring 2014, campus began the transition to bCourses, Berkeley's new Learning Management System. Over the next two years, Educational Technology Services (ETS) will guide campus faculty and students in the adoption of bCourses, culminating in the retirement of bSpace in the summer of 2015.

We have set up a special bCourses training with an expert trainer from ETS. The training will be from 1-2:30 pm on Wednesday, June 25, in 338 Koshland Hall. Please watch for additional details in the coming weeks. Contact Karyn Houston (643.7614, karyn@berkeley.edu) if you have questions.

And, for more information on the transition to bCourses, please visit the ETS website: <http://ets.berkeley.edu/bcourses/>.



Zilberman Lab in March Issue of *Cell*

Innovative research from Postdoc Jason T. Huff and PMB Associate Professor Daniel Zilberman is featured in the March issue of *Cell*. The paper is on chromatin and evolution, mostly about eukaryotic algae.

Organisms contain information that is copied and inherited as cells replicate to make new cells, Huff said. For example, there are the four bases of DNA: C, T, G, and A. In addition, a chemical modification of the C base, methylation, can be copied and inherited. DNA methyltransferase 1 (Dnmt1) is responsible for copying methylation in many organisms.

"In our work we studied numerous organisms that are missing Dnmt1 to see what kind of methylation they have instead," Huff said. To the authors' great surprise, many of these organisms also have methylation that is copied, but a different, previously uncharacterized enzyme is responsible: DNA methyltransferase 5 (Dnmt5). The Nobel Prize-winning scientist François Jacob likened

evolutionary processes to tinkerers, pointing out that "different tinkerers interested in the same problem will reach different solutions." In the case of Dnmt1 and Dnmt5, it appears that evolution has tinkered up at least two different solutions to the same problem.

By further studying the organisms that use Dnmt5 for methylation instead of Dnmt1, Huff and Zilberman also found a number of curious features. In some of the organisms, the methylation occurs in their DNA at very high densities, but in a pattern alternating with DNA that is not methylated. This periodic pattern of methylation and lack of methylation is used to help position nucleosomes, the basic repeating structure of DNA packaging. Also, the DNA is fit into a tiny

nucleus, the repository for most of the DNA in these organisms, which is extremely compact.

Such small size may be a distinct advantage for these organisms, which are marine algae that photosynthesize for a living. These features are found in groups of algae that separated from each other more than a billion years ago, so perhaps the biggest unresolved questions raised by the work are: how far back in time do these features go, and did the ancestors of plants and animals look similar to or different from these algae?

To read the paper visit: <http://www.sciencedirect.com/science/article/pii/S0092867414000816>.

Cell Biology Across the Bay

The American Society of Plant Biologists (ASPB) and the American Society of Cell Biologists (ASCB) will be meeting on May 3rd and 4th at Santa Clara University.

Saturday's focus is on "Quantitative Imaging in Cell Biology" across Kingdoms and Sunday will focus on "Cell and Developmental Biology in Plants."

Several outstanding scientists will present their ideas and research. Plant scientists and cell biologists from Berkeley are invited to give a talk or present a poster and share ideas.

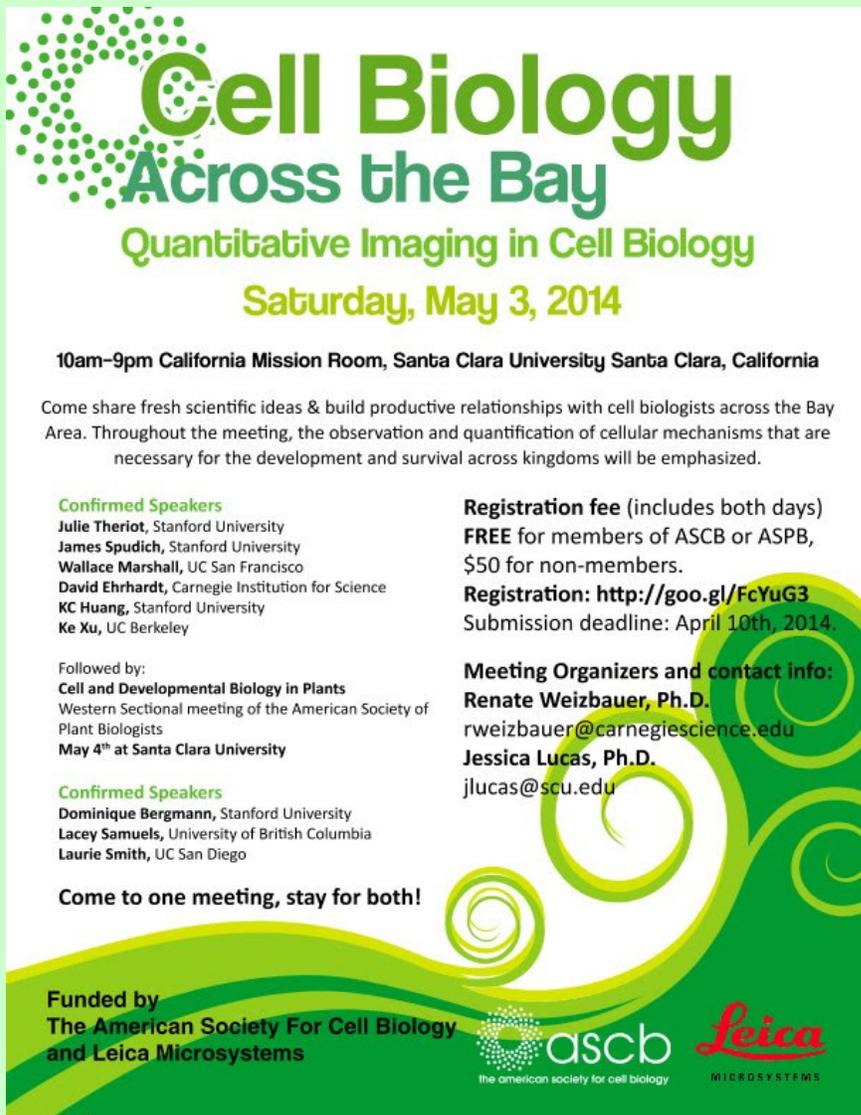
Registration is free for members of either society.

Important Links:

<http://www.ascb.org/2014-funded-meetings>

and

http://my.aspb.org/events/event_details.asp?id=397097



Cell Biology Across the Bay
Quantitative Imaging in Cell Biology
Saturday, May 3, 2014

10am-9pm California Mission Room, Santa Clara University Santa Clara, California

Come share fresh scientific ideas & build productive relationships with cell biologists across the Bay Area. Throughout the meeting, the observation and quantification of cellular mechanisms that are necessary for the development and survival across kingdoms will be emphasized.

Confirmed Speakers
Julie Theriot, Stanford University
James Spudich, Stanford University
Wallace Marshall, UC San Francisco
David Ehrhardt, Carnegie Institution for Science
KC Huang, Stanford University
Ke Xu, UC Berkeley

Registration fee (includes both days)
FREE for members of ASCB or ASPB,
\$50 for non-members.
Registration: <http://goo.gl/FcYuG3>
Submission deadline: April 10th, 2014.

Meeting Organizers and contact info:
Renate Weizbauer, Ph.D.
rweizbauer@carnegiescience.edu
Jessica Lucas, Ph.D.
jlucas@scu.edu

Followed by:
Cell and Developmental Biology in Plants
Western Sectional meeting of the American Society of Plant Biologists
May 4th at Santa Clara University

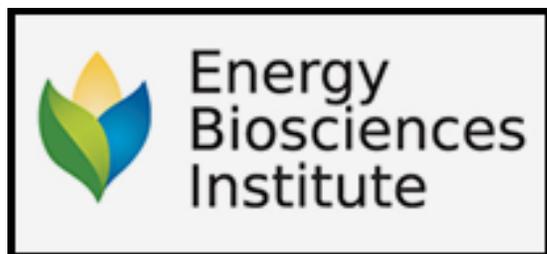
Confirmed Speakers
Dominique Bergmann, Stanford University
Lacey Samuels, University of British Columbia
Laurie Smith, UC San Diego

Come to one meeting, stay for both!

Funded by
The American Society For Cell Biology
and Leica Microsystems

 **ascb**
the american society for cell biology

 **Leica**
MICROSYSTEMS



Energy Biosciences Institute 2014 Call for Preproposals

The Energy Biosciences Institute (EBI) has issued a call for new research proposals for funding available for the period 2015-17. Pre-proposals are due from faculty no later than April 30, 2014.

To be eligible, faculty must have primary appointments at one of the partner EBI institutions, which include UC Berkeley and Lawrence Berkeley National Laboratory.

The Institute has ongoing interest in novel areas of research relating to bioenergy - feedstock options, biomass depolymerization, biofuels production, fossil fuel bioprocessing, and the environmental, social and economic impacts of a biofuel industry. In this year's call, emphasis is especially placed on areas of biofuel production and fossil fuel microbiology. Go to [EBI Proposal Call 2014](#) for more information. Faculty submitting pre-proposals considered a good fit for the EBI's goals will be invited to submit a more detailed proposal, including a proposed budget and timelines. A confidential peer review process will identify successful proposals for funding consideration by the EBI Executive Committee.

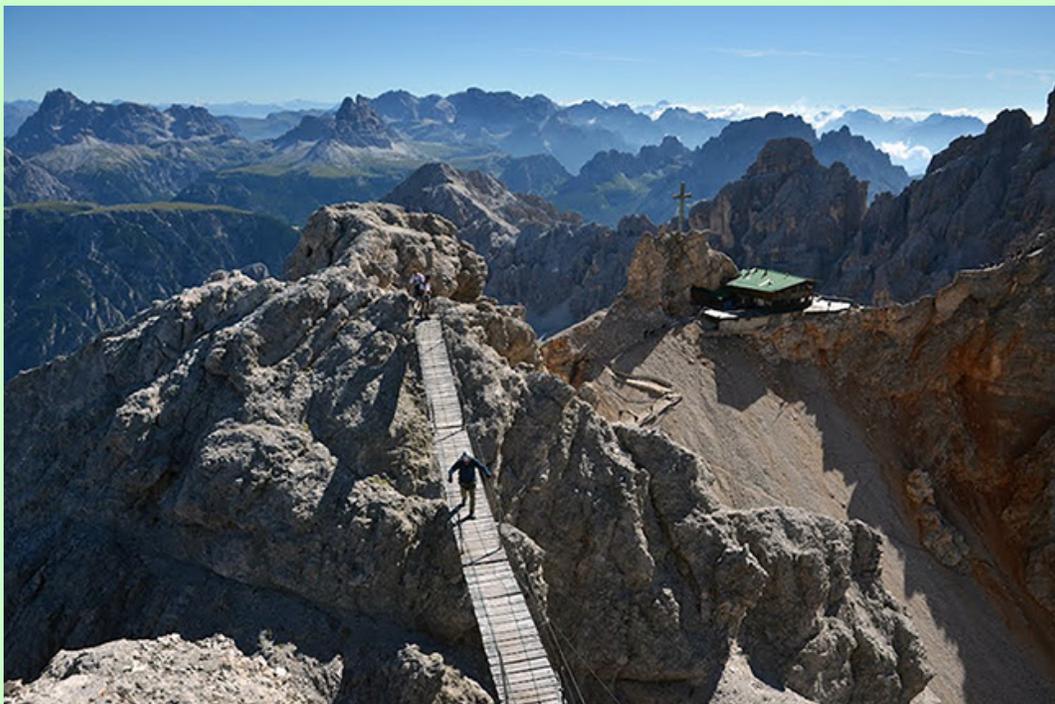
More information about submissions procedures, format and timelines can be found on the EBI website, www.energybiosciencesinstitute.org, at "Proposal Process" under the "Resources" menu. Scientific content questions should be addressed to EBI Managing Director Susan Jenkins (sjenkins@berkeley.edu). General and/or process questions should be addressed to EBI Research Administration Manager Anne Krysiak (annekrysiak@berkeley.edu).

Tim Szaro Retiring After 25 Years as Lab Manager

Tim Szaro, Lab Manager of the Bruns and Taylor Labs, will be retiring from UC Berkeley at the end of June.

Szaro held the lab manager post for 25 years and trained approximately 150 post docs, graduate and undergraduate students in the modern molecular methods used in the two fungal labs. He has overseen the revolution in the scientific analysis of fungi, supervising the installation of several generations of DNA identification technologies. In addition, he has hosted numerous qualifying exam celebrations, and has purchased over two thousand oysters for the famous Limantour Beach picnics.

Tim received his BS in Biology from Stanford in 1977 and his MA in Botany from Berkeley in 1979. Tim and his husband of 22 years, Adam Richmond, live in San Francisco. Tim is planning a major hiking trek in the Dolomites in August.



Tim Szaro in Italy

The Fungi Forager

Sydney Glassman, a member of the Bruns Lab at Plant & Microbial Biology, and a PhD candidate in the Department of Environmental Science Policy Management, shares mushroom hunting expertise in this fun video feature.

Footage includes looking for mushrooms on the UC Berkeley campus.

Check out the full video at <http://vimeo.com/89270562>.



Sydney Glassman with mushrooms!

Remaining PMB Seminars - Spring 2014

PMB Seminar Series - Spring 2014 *All seminars take place in 101 Barker Hall from 12-1PM.*

- 4/16/14: Peter Kennedy, University of Minnesota
"Ectomycorrhizal Specificity and Functioning in a Global Tri-partite Symbiosis"
- 4/23/14: Andreas Weber - Universität Düsseldorf
"3to4 - A Blueprint for C4 Photosynthesis Derived from Comparative Evolutionary Transcriptomics"
- 4/30/14: Margaret McFall-Ngai - University of Wisconsin, Madison
"Discovering the Mechanisms Underlying Symbioses: Exploration of the Frontier Using Model Systems"

"Local Talent" Seminar Series- Spring 2014 *All seminars take place in 101 Barker Hall from 12-1PM.*

- 4/21/14: Dominique Loque - Lawrence Berkeley National Laboratory (LBNL) / Joint BioEnergy Institute "Use of Synthetic Biology to Improve Bioenergy Crops"

Graduate Student/Postdoc Seminars - Spring 2014 *All seminars take place in 338 Koshland Hall on Mondays from 12-1PM.*

- 4/28/14: Patrick Browne - Komeili Lab Graduate Student
- 4/28/14: Rose Kantor - Banfield Lab Graduate Student
"Metagenomic Analysis of a Thiocyanate-Degrading Bioreactor Community"
- 5/5/14: Allison Schwartz - Staskawicz Lab Graduate Student
- 5/5/14: Michael Steinwand - Wildermuth Lab Graduate Student

Plant Gene Expression Center (PGEC) Seminars - Spring 2014

- 4/15/14 10:30 am - 11:30 am: Andrea Eveland
"Inflorescence Architecture in Grasses: Regulatory Networks and Translational Genomics"
- 4/17/14 11 am - 12 pm: David Braun, Interdisciplinary Plant Group, University of Missouri, "TBA" - PGEC, conference room 2/3, 3rd floor, 800 Buchanan St., Albany, CA
- 4/24/14 10:30am - 11:30am: Devin Coleman-Derr,
"From FASTA to Function: Leveraging Genomic Data to Advance Plant Science"

For more information on all seminars, please visit <http://pmb.berkeley.edu/seminars>.

4th Annual Bay Area Symposium on Viruses

The goal of the Annual Bay Area Symposium on Viruses is to strengthen the network of scientists in the San Francisco Bay Area working on virology, host-pathogen interactions, and control of human and animal viral infections. The symposium also serves as the annual meeting for BayViro, the Bay Area Virus Network.

WHEN: Friday, May 30, 2014, 9 am - 6 pm

WHERE: Li Ka Shing Center Auditorium, University of California, Berkeley

CONFIRMED SPEAKERS:

- Ann Arvin, Stanford
- Jody Baron, UCSF
- Laurent Coscoy, UC Berkeley
- Bryce Falk, UC Davis
- Romas Geleziunas, Gilead
- Peter Kim, Stanford
- Phillip Norris, BSRI

Please register here: <https://www.eventbrite.com/e/4th-annual-bay-area-symposium-on-viruses-tickets-8983328377>.

For more information on the Bay Area Virus Network and this event, please visit <http://bayviro.org/>.



Job Opening: Rho Renewables, Inc.

Rho Renewables, Incorporated is a start-up biotechnology company with laboratories located in Belmont, CA. They are developing microbiological processes for the manufacture of renewable specialty chemicals and biofuels.

They are currently seeking an entry-level research assistant to join their research team. This is initially a six-month contract position, which may become permanent at the conclusion of the contract.

Your Responsibilities will be the following but not limited to:

- * Performing experimental work as part of strain development activities.
- * Assisting with fermentation process development/optimization.
- * Preparation of media, buffers and reagent formulations.
- * Developing daily work plans, documenting experimental work, analyzing data, and reporting results.
- * Maintaining lab. cleanliness, autoclaving and general cleaning of lab. equipment.

Requirements:

- * At least a Bachelor's degree in microbiology-, bioengineering- or biochemistry-related scientific discipline.

- * 1-3 years of related lab experience.
- * Must have hands-on experience working in the fields of yeast and E. coli media preparation and transformation, SDS-PAGE, DNA/protein extraction, sterile microbiology technique.
- * Ability to keep a microbiology laboratory clean and organized.
- * Experience in fermentation process will be a big plus.
- * Ability to be a problem solver, coupled with a strong work ethic is required.
- * Ability to work independently within a small start-up team and share responsibilities.
- * Ability to lift up to 50 lbs weight for autoclaving fermentation equipment with media.
- * Good time management, data presentation, and communication skills.
- * Desire to learn new skills and grow his/her knowledge of microbiological and fermentation sciences.

Please submit your curriculum vita to jpsun2013@gmail.com. Local candidates only; location is Belmont, CA.

National Science Foundation Awards and Honorable Mentions

The National Science Foundation Graduate Research Fellowship Program award list is now published online, and includes the Awards and Honorable Mentions from the Department of Plant & Microbial Biology listed below:

Fellowship Recipients

Angelica Castaneda (Micro)
 Rebecca Mackelprang (Plant - Wildermuth Lab)
 Gabriel Rosenfield (Micro)
 Even Starr (Micro)
 Christopher Gee (Plant)

Honorable Mentions

Ouwei Wang (Micro)
 Tyler Helmann (Plant)
 Jessica Graves (Micro - Jansson Lab)
 Jeffrey Johnson (Micro - Niyogi Lab)
 Riva Bruenn (Plant - Specht Lab)
 Monica Hernandez (Plant - Lindow Lab)
 Daniel Naylor (Plant - Pauly Lab)

Natural Sciences and Engineering Research Council of Canada Recipient

Magdalena Stoeva (Micro)
[NSERC](http://www.nserc.ca)



For more information please visit: <http://www.nsfgrfp.org/>.

PMB and Partners at Cal Day 2014 - Saturday, April 12



Food, Fun, Fungus and So Much More!

Plant & Microbial Biology will be partnering with the Energy Biosciences Institute and the College of Natural Resources for a Cal Day Extravaganza including:

- Steve Lindow's amazing Ice Nucleation Magic Show
- Plant Student Group's "Up Close and Personal with Plants"
- Food, Fun and Fungus - Explore Cal's Amazing Microgarden, a diverse collection of fungus
- Information Marketplace - Meet with PMB Faculty and find out about our exciting undergraduate majors in plant and microbial biology.
- Microbial Thumbprint - find out exactly what is going on with your thumb; view your microbial thumbprint.
- Energy Biosciences Institute Special Display -- From Bio to Fuel: Getting Energy from Plants.

And much more. Most of the action takes place from 11 am to 2 pm at the Genetics and Plant Biology Lawn, next to Pat Brown's Grill and Li Ka Shing Center. Enjoy all of the Cal Day festivities throughout campus starting at 9 am.

See the full PMB/CNR/EBI program at this link: pmb.berkeley.edu/calday_2014

Find out more about Cal Day across campus here: Calday.berkeley.edu

Important Dates | Upcoming Events

Spring 2014

4/12/14 - Cal Day

4/22/14 - Faculty Meeting

5/2/14 - Remembrance Gathering for Sydney Kustu, Alumni House

5/2/14 - Classes End

5/5 to 5/9/14 - Review Week

5/12 to 5/16/14 - Finals Week

5/26/14 - Memorial Day Holiday

5/29/14 - Faculty Meeting

9/5/14 - 9/7/14 - PMB Retreat, Asilomar



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The PMB newsletter is produced by the Department of Plant & Microbial Biology, UC Berkeley.
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