

***PROCEEDINGS***  
*of the*  
***Annual Meeting***  
*of the*  
***AAAS, PACIFIC DIVISION***

*Volume 28, Part I*

*14 August 2009*

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***CONTRIBUTED POSTERS***

**90<sup>th</sup> Annual Meeting of the Pacific Division of the  
American Association for the Advancement of Science**

*San Francisco State University*  
*and the*  
*California Academy of Sciences*  
*San Francisco, CA*  
*14 – 19 August 2009*

*Contents accurate as of 22 July 2009.*  
*Times and/or locations of events may change.*  
*Please refer to the “Changes” flyer for updated information.*

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## IV. CONTRIBUTED POSTERS

189 poster number is also the abstract number

193 (number italicized and underlined) identifies a student presentation

\*identifies the presenter from among several authors listed

NOTE TO PRESENTERS: Boards on which to attach poster presentations will be set up in the hallway of the third floor of Hensill Hall. The poster boards have numbers on them that coincide with the numbers assigned to the posters in this program (see number to the left of the title of each presentation). You are expected to use the appropriately numbered display space for your poster.

Posters should be set up at least 15 minutes prior to the start time of your session. You must be present with your poster for at least one hour during the four hours of the poster session in order to discuss your work. Cards will be available to use in posting the time(s) you will be available. ***If you are a student in competition for an Award of Excellence, you must be present with your poster from 12:00 p.m. to 2:00 p.m. if presenting on Monday or 11:30 a.m. to 1:30 p.m. if presenting on Tuesday in order to give judges the opportunity to review and discuss your work with you.*** Posters should be removed within one-half hour of the end of the session. Presenters assume full responsibility for the security of their poster and other materials.

### *Quick Directory of Sponsoring Sections and Their Posters*

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Anthropology and Archaeology . . . . .	187
Cell and Molecular Biology . . . . .	190 – 198
Chemistry and Biochemistry. . . . .	180 – 181
Ecology, Organismal Biology and Environmental Sciences . . . . .	206 – 213
Education . . . . .	174 – 179
Health Sciences. . . . .	199 – 205
Industrial Science and Technology . . . . .	182 – 183
Psychology . . . . .	184 – 186
Social, Economic and Political Sciences . . . . .	188 – 189

*High School*, **RAYNELLE RINO<sup>1\*</sup>**, **CYNTHIA WILBER<sup>2</sup>**, and **RODOLFO DIRZO<sup>1</sup>** (<sup>1</sup>Department of Biology, Stanford University, Stanford, CA; <sup>2</sup>Jasper Ridge Biological Preserve, Woodside, CA).

177 *CalSmiles: Innovative, Student-driven Education Program Increases Oral Health Knowledge and Awareness*, **TANNER Y. ZANE<sup>1\*</sup>** and **PAMELA Z. HAN<sup>2</sup>** (<sup>1</sup>University of California San Francisco, School of Dentistry, San Francisco, CA; <sup>2</sup>University of California Berkeley, School of Public Health, Berkeley, CA).

178 *Telling a Molecular Story: Mevalonate Kinase – Initiating the Pathway to the Cure for Malaria*, **LINCOLN SMART TEAM<sup>1\*</sup>**, **LARS WESTBLADE<sup>2</sup>**, **KURT GILES<sup>3</sup>**, **RICHARD GIN<sup>1</sup>**, and **JULIE REIS<sup>1</sup>** (<sup>1</sup>Abraham Lincoln High School, San Francisco, CA; <sup>2</sup>Center for BioMolecular Modeling, Milwaukee School of Engineering, Milwaukee, WI; <sup>3</sup>Institute for Neurodegenerative Diseases, University of California, San Francisco, CA).

179 *Building Sustainability at Cal—What the Students Do*, **IRENE SELIVERSTOV<sup>\*</sup>** and **WILLIAM B.N. BERRY** (Environmental Sciences, University of California, Berkeley, CA).

### Monday, 17 August 2009

#### **POSTER SESSION I**

HENSILL HALL 3<sup>rd</sup> Floor Hallway

Monday

12:00 PM – 4:00 PM

#### **EDUCATION**

**174** *Toward the Identification of Value Conflicts in Ecological Restoration*, **MILTON O. MEUX<sup>1</sup>** and **BRIAN M. MEUX<sup>2</sup>** (<sup>1</sup>Berkeley, CA; <sup>2</sup>Santa Monica Baykeeper, Marina Del Rey, CA).

175 *Monitoring African Bushmeat in the Classroom: Global Conservation Education*, **MEGAN MORIKAWA<sup>1\*</sup>** and **JAY VAVRA<sup>2</sup>** (<sup>1</sup>Duke University, Durham, NC; <sup>2</sup>High Tech High, San Diego, CA).

176 *Critical Science Outreach: Implementing an Ecology Education Program into a California Alternative*

#### **CHEMISTRY and BIOCHEMISTRY**

**180** *Chemical Modification of Proteins to Improve Chemical Stability and Chromatographic Performance as SEC Standards*, **JERRY L. WILSON** (JLW Research, Davis, CA).

181 *Biogenic Silica Incorporated Bio Sensors for Ultra Sensitive Protein Detection*, **GAURAV**

**CHATTERJEE<sup>1\*</sup>, VINDHYA KUNDURU<sup>1</sup>, KAI-CHUN LIN<sup>2</sup>, B. L. RAMAKRISHNA<sup>2</sup>, and SHALINI PRASAD<sup>1</sup>** (<sup>1</sup>Department of Electrical Engineering, Arizona State University, Tempe, AZ; <sup>2</sup>School of Materials, Arizona State University, Tempe, AZ).

**INDUSTRIAL SCIENCE and TECHNOLOGY**

**182** *Conceptual Study of an Algal Bioreactor System for Nutrient and Pollution Mitigation and Supplemental Renewable Biogas Evolution at a Large Municipal Wastewater Treatment Plant*, **ERIC LARSEN, LINDA WINTERS, and CAROL WEIR** (East Bay Municipal Utility District, Oakland, CA).

**183** *Nuclear Power for Propulsion and Power Supply for High Altitude Platforms*, **BRADLEY S. TICE** (Turlock, CA).

**PSYCHOLOGY**

**184** *Alpha/numeric Data-based, Hypothesis-driven Treatment of Complex Psychiatric and Neurological Disorders*, **BHAVANA VISHNUBHOTLA** (Glen Eden Multimodal Centre, Vancouver, BC, Canada).

**185** *Independent Component Analysis of EEG Activity in the Mirror Neuron System (MNS) During Visual Perception of Body-Movements*, **ANTHONY CARNEVALE BONILLA<sup>1\*</sup>, JENNIFER G. TORRES<sup>2</sup>, MAYRA ESTRADA<sup>2</sup>, CHLOE BOYLE<sup>2</sup>, KRISTINE SARNLERTSOPHON<sup>3</sup>, SCHUYLER S. ROCKWOOD<sup>4</sup>, and STANLEY E. LUNDE<sup>4</sup>** (<sup>1</sup>School of Biological Sciences, University of California Irvine, Irvine, CA; <sup>2</sup>Department of Psychology and Sociology, California State Polytechnic University Pomona, Pomona, CA; <sup>3</sup>Department of Biomedical Engineering, The Johns Hopkins University, Baltimore, MD; <sup>4</sup>University of California Los Angeles, MRRC at Lanterman Developmental Center, Pomona, CA).

**186** *Computer Simulated Conflicts Assess Room Colors' Effects on Workplace Mood and Behavior*, **KRISTEN M. CLARK** (Department of Psychology, Washington State University Tri-Cities, Richland, WA).

**ANTHROPOLOGY and ARCHAEOLOGY**

**187** *Preparation as a Mechanism of Hominin Adaptation*, **MICHAEL BIFERNO** (Biferno and Associates, Arcadia, CA).

**SOCIAL, ECONOMIC, and POLITICAL SCIENCES**

**188** *Domestic Violence Suspects' Use of Illicit Drugs and Alcohol as a Risk Factor for Arrest*, **STEPHEN J. MOREWITZ** (Research Division, Stephen J. Morewitz, Ph.D., and Associates, IL and CA, Litigation Consultants, San Francisco, CA, and San Jose State University, Department of Sociology, San Jose, CA).

**189** *Partner Violence as a Risk Factor for Child Physical Abuse*, **STEPHEN J. MOREWITZ** (Research Division, Stephen J. Morewitz, Ph.D., and Associates, IL and CA, Litigation Consultants, San Francisco, CA, and San Jose State University, Department of Sociology, San Jose, CA).

Tuesday, 18 August 2009

**POSTER SESSION II**HENSILL HALL 3<sup>rd</sup> Floor Hallway

Tuesday

9:30 AM – 1:30 PM

**CELL and  
MOLECULAR BIOLOGY**

**190** *Fluorescent Marker for Stem Cell Differentiation*, **ALBERT AVILA**, **GIPSON LYLES\***, **AMIT DESHPANDE**, **WILLIAM CHENG**, and **YONG KIM** (Howard Hughes Medical Institute Pre-College Science Program, University of California Los Angeles School of Dentistry, Los Angeles, CA).

**191** *Loss of Ectoderm Membrane Rafts Produce Variable Inhibitions of Myogenic Specification in Segmental Plate Mesoderm (SPM)-derived Somites in Chicken Embryos*, **ROSELLE VISAYA\*** and **WILFRED F. DENETCLAW** (Department of Biology, San Francisco State University, San Francisco, CA).

**192** *Ectoderm-derived Sphingomyelin Signals Regulate Somitogenesis and Primary Myotome Formation in Chicken Embryos*, **TENZIN BHUTIA\*** and **WILFRED F. DENETCLAW** (Department of Biology, San Francisco State University, San Francisco, CA).

**193** *CXCL-1 and Rho-Gap 8 PTH Induced Primary Response Genes*, **EMILIO FRIAS\***, **NOEMI ZALDIVAR\***, **JEANNE NERVINA**, and **VETEA MIKLUS** (Howard Hughes Medical Institute Pre-College Science Program, University of California Los Angeles School of Dentistry, Los Angeles, CA).

**194** *Effects of Resveratrol and Piceatannol on Cellular Replication of NHEK*, **MARISOL NUNEZ\***, **KAROLYN BLANCAS\***, **MO KANG**, and **ROY KIM** (Howard Hughes Medical Institute Pre-College Science Program, University of California Los Angeles School of Dentistry, Los Angeles, CA).

**195** *Myxococcus xanthus: Cell Signaling and Programmed Cell Death*, **AARON BROWN\***, **SHAYLN SMITH\***, **ARTURO CALDERON-FLORES**, **CHRISTOPHER KAPLAN**, and **WENYAUNRTURO SHI** (Howard Hughes Medical Institute Pre-College Science Program, University of California Los Angeles School of Dentistry, Los Angeles, CA).

**196** *Ionizing Irradiation Produces a Delay in Pupation in the Hornworm, *Manduca sexta**, **LOUIE RAMOS<sup>1\*</sup>**, **CLEOPA OMONDI<sup>1\*</sup>**, **ADRIAN HALME<sup>2</sup>**,

and **MEGUMI FUSE<sup>1</sup>** (<sup>1</sup>Department of Biology, San Francisco State University, San Francisco, CA; <sup>2</sup>Department of Molecular and Cell Biology, University of California, Berkeley, CA).

**197** *Determination of the Neurotransmitter that Inhibits the CNS During Ecdysis in the Hornworm, *Manduca sexta**, **LAURA MENDOZA\***, **ROTH EA\***, **ADRIAN CHASE**, and **MEGUMI FUSE** (San Francisco State University, Department of Biology, San Francisco, CA).

**198** *Characterizing Ecdysis Behaviors in the Stick Insect*, **ANDREW CARRIMAN\*** and **MEGUMI FUSE** (Department of Biology, San Francisco State University, San Francisco, CA).

**HEALTH SCIENCES**

**199** *The Association of Personal Characteristics and Social Support Resources with the Ability to Afford Needed Dental Care*, **EDGAR RIVERA\***, **DIANE VASQUEZ\***, **ELMER BARNES\***, and **BENJAMIN A. FREED** (University of California Los Angeles School of Dentistry, Los Angeles, CA).

**200** *Factors Associated with Severe Periodontal Bone Loss in a National Probability Sample of Diabetics and Non-Diabetics in the United States*, **THIEN DO\***, **KRYSTLE HOLFORD\***, **JIE SHEN**, and **HONGHU LIU** (University of California Los Angeles School of Dentistry, Los Angeles, CA).

**201** *Vitamin D Deficiency and Bisphosphonate Effects on Bone*, **BRIELLE McDANIEL<sup>1\*</sup>**, **MICHAELA SCOTT<sup>1\*</sup>**, **AKISHIGE HOKUGO<sup>2</sup>**, and **ICHIRO NISHIMURA<sup>2</sup>** (<sup>1</sup>Howard Hughes Medical Institute Pre-College Science Program, University of California Los Angeles School of Dentistry and <sup>2</sup>The Weintraub Center for Reconstructive Biotechnology, University of California Los Angeles School of Dentistry, Los Angeles, CA).

**202** *Effect of Altering Apparent Viscosity and Elastic Modulus of Tracheal Mucus and Positioning on Displacement of Mucus during Simulated Cough in Patients with a Wide Range of Respiratory Diseases*, **ANPALAKI J. RAGAVAN<sup>1\*</sup>**, **CAHIT A. EVRENSEL<sup>1,2</sup>**, and **PETER KRUMPE<sup>1,3</sup>** (<sup>1</sup>Graduate Program of Biomedical Engineering, University of Nevada, Reno, NV; <sup>2</sup>Department of Mechanical Engineering, University of Nevada, Reno, NV; <sup>3</sup>School of Medicine, University of Nevada, Reno, NV).

## CONTRIBUTED POSTERS – Tuesday

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- 203** *Estrogen Signaling Modulates Cisplatin Resistance in the Treatment of Human Non-Small Cell Lung Cancer Cells*, **AMITKUMAR PATEL\***, **DIANA C. MARQUEZ-GARBAN**, and **RICHARD J. PIETRAS** (University of California Los Angeles Department of Medicine, Division of Hematology-Oncology, Los Angeles, CA).
- 204** *The Relationship of Calcium Concentration on *Blastomyces dermatitidis* Yeast Cell Growth and Antibody Detection with Cell Lysate Antigens*, **JAMES B. SMITH**, **ROSS DECHANT**, and **GENE M. SCALARONE** (Department of Biological Sciences, Idaho State University, Pocatello, ID).
- 205** *Comparative Studies on  $\alpha$ -(1,3)-glucan in *Blastomyces dermatitidis* Yeast Lysate Antigens and the Use of the Lysates for the Detection of Antibodies*, **MANDIRA MANANDHAR** and **GENE M. SCALARONE** (Department of Biological Sciences, Idaho State University, Pocatello, ID).
- 206** *A Study of the Changes in Composition of Native vs. Non-native Plant Density in Oregon Coastal Clatsop Prairie under Species Specific Management Conditions*, **DEREK NAEGELI\*** and **MEGHANN CARTER\*** (Environmental Science, Pacific University, Forest Grove, OR).
- 207** *Effect of Host on *Symbiodinium* Gene Expression*, **ERIKA DIAZ-ALMEYDA\***, **SHINICHI SUNAGAWA**, **CHRISTIAN VOOLSTRA**, **COLLIN CLOSEK**, and **MONICA MEDINA** (School of Natural Sciences, University of California, Merced, CA).
- 208** *Pattern of Symbiont Distribution in Two Intertidal Isopods (*Ligia pallasii* and *L. occidentalis*) along the Eastern Pacific*, **RENATE EBERL\***, **MATTHEW COHN**, and **DONALD R. STRONG** (University of California Davis, Department of Evolution and Ecology, Davis, CA).
- 209** *Modeling the Impacts of Climate Change on San Francisco Bay-Delta Wetlands and Links to Pelagic Food Webs*, **V.T. PARKER<sup>1</sup>**, **J.C. CALLAWAY<sup>2</sup>**, **E.R. HERBERT<sup>1</sup>**, **L.M. SCHILE<sup>3</sup>**, **V.T. VREDENBURG<sup>1</sup>**, **M.C. VASEY<sup>1,4</sup>**, **E.L. BORGNIS<sup>2</sup>**, **N.M. KELLY<sup>3</sup>**, and **D.M. TALLEY<sup>5</sup>** (<sup>1</sup>Department of Biology, San Francisco State University, San Francisco, CA; <sup>2</sup>Department of Environmental Science, University of San Francisco, San Francisco, CA; <sup>3</sup>Department of Environmental Science and Policy Management, University of California Berkeley, Berkeley, CA; <sup>4</sup>Department of Environmental Studies, University of California Santa Cruz, Santa Cruz, CA; <sup>5</sup>Department of Marine Science and Environmental Studies, University of San Diego, San Diego, CA).
- 210** *The Presidio Bee Biodiversity Survey*, **CHRISTOPHER QUOCK\*** and **JESSICA VAN DEN BERG** (Department of Biology, San Francisco State University, San Francisco, CA).
- 211** *Altered Host Nutrient Consumption and Utilization Determines Parasite Success*, **S.N. THOMPSON** and **R.A. REDAK** (Department of Entomology, University of California, Riverside, CA).
- 212** *Diversity on the California Academy of Sciences' Green Roof*, **JESSICA VAN DEN BERG** (Department of Biology, San Francisco State University, Entomology Lab, San Francisco, CA).
- 213** *Phylogenetic Analysis of Relationships within *Phacelia* (Boraginaceae) Inferred from Chloroplast Sequence Data*, **GENEVIEVE K. WALDEN\*** and **ROBERT PATTERSON** (San Francisco State University, Department of Biology, San Francisco, CA).