The 6th Annual College of Science Student Research Day,
Friday, May 7, 2010
Duncan Hall, First floor breezeway
10:00am to 1:00pm

Department of Biological Sciences

1. The Response of Zigadenus fremontii (Liliaceae) to Variation in Fire Regime.
   Shannon Dinis
   Faculty: Susan Lambrecht, M. Beth Dawson, David Bruck

2. Expression of CAM Photosynthetic Activity in a Coastal Dune Dudleya (Crassulaceae) in Association With Flowering.
   Maria Bangal
   Faculty: Susan Lambrecht

3. Characterization of Notch and Mastermind in Breast Cancer Cell Lines
   Iris Delgado
   Faculty: J. Brandon White

4. FADH$_2$-Dependent Halogenases in Marine Bacteria.
   June Shinseki, Milena Lilles
   Faculty: Sabine Rech

5. Analysis of Archeal Sequences from Microbial Communities in the Mojave Desert.
   Katya Polovina, Carlo Testa
   Faculty: Sabine Rech

   Joori Park, Philip Knezevich, William Wung, Shanté O’Hanlon, Akshi Goyal, Mekala Rahman, Kang Shen,
   Faculty: Miri VanHoven

   Kelli Benedetti, Akshi Goyal, Dianicha Santana, Pooja Prasad, Joori Park
   Faculty: Miri VanHoven

8. A Forward Genetic Screen to Identify New Genes that Mediate Synaptic Partner Choice in C. elegans.
   Shanté O’Hanlon, Mekala Raman
   Faculty: Miri VanHoven

9. The Effects of Bordetella pertussis and Bordetella parapertussis on T Cell Trafficking
Molecules.
Brian Kwong, Sana Waheed, Nicole Tarlton, Dipti Ravindra
Faculty: Tzvia Abramson

11. Multicolor Flow Cytometry Analysis of Circulating IgA Plasmablasts Homing to Gut Mucosa in Inflammatory Bowel Disease Pediatric Patients Treated with Immunosuppressive Medications.
Nicole Tarlton, Caroline Green, Sandy Voong
Faculty: Tzvia Abramson

12. The Fine Line Between Human and Sludge Microbiomes.
Jamsheed Ghadiri, Jorge Dinis
Faculty: Cleber Oouverney

13. Apoptosis Induction by HUVEC and HeLa Cells by Acocostatin.
Agustin Seoane, Carla Ramos, Takele Taklemariam
Faculty: Julio G. Soto

Jason Choi, Agustin Seoane, Brandon Gaytan
Faculty: Julio G. Soto
Collaborators: Elda Sanchez, Sara Lucena, Maria Sugarek NTRC (Texas A&M University-Kingsville)

15. Genetic characterization of Dungeness crab (Cancer magister) populations along the Pacific Northwest coast using mitochondrial and nuclear DNA.
Bryan Barney, Humberto Rocha, Joshua Mackie, and Leslee Parr
Faculty: Dr. Leslee Parr, Dr Joshua Mackie

16. Sexing Greater Roadrunners (Geococcyx californianus) using External Morphology and Discriminant Function Analysis.
Humberto Rocha, Michael MacDonald, Joshua Mackie, and Leslee Parr
Faculty: Dr. Leslee Parr, Dr Joshua Mackie

17. Examination of Tbx5 Expression During Chick Embryonic Heart Development.
Viashali Agarwal, Adriena Martinez
Faculty: Steven White.

Department of Chemistry

Phuong Ngoc, Mary E. Cooper, Ngoc Huynh, Misa Au
Faculty: Lionel E. Cheruzel
19. Novel Molecular Imprinted Polymer as P450 metalloenzyme active site mimic.  
Ruby Lo, Matthew T. Berry, Amandeep Nijjar  
Faculty: Lionel E. Cheruzel

Josh E. Young  
Faculty: Joseph J. Pesek, Maria M. Matyska  
Collaborators: Sergio Yoc

Andrew J. Ingram, Eliseo E. Quiroz, Alex Dunlap, Truman Jefferson  
Faculty: Gilles Muller

Kim Ngan T. Hua, Jamie L. Lunkley  
Faculty: Gilles Muller

Leon Castaneda, Laila Dafik  
Faculty: Marc d’Alarcao*

Smita Fulzele  
Faculty: Marc d'Alarcao

25. The Effects of Organics on Atmospheric Sulfuric Acid Particles and the Implications for Climate.  
Kieu Ha  
Faculty: Annalise Van Wyngarden  
Collaborators: Carolyn Belle, The Colorado College, Colorado Springs, CO; Cecilia Dalle Ore, Dartmouth College, Hanover, NH; Matthew Morrissey, University of California, Berkeley, CA; Jeffrey Rodgers, Dickinson College, Carlisle, PA; Deborah Gross, Carleton College, Northfield, MN; Laura Iraci, NASA Ames Research Center, Moffett Field, CA

Faculty: Annalise Van Wyngarden  
Collaborators: Carolyn Belle, The Colorado College, Colorado Springs, CO; Landon Brown & Cecilia Dalle Ore, Dartmouth College, Hanover, NH; Rebecca Hooper, California Polytechnic State University, San Luis Obispo, CA; Matthew Morrissey, University of California, Berkeley, CA; Jeffrey Rodgers, Dickinson College, Carlisle, PA;

27. Use of CD Spectroscopy to Assess the Biocompatibility of Silica-based Materials.
28. **Do Changes in Lysozyme Stability Correlate with Changes in the Free Energy of Bulk Water?**
   Lana E. Whitmer
   Faculty: Daryl K. Eggers

29. **Sequence Homology Calculations for Proteins and Relevant DNA Indicate Specific Limitations for a Gap-Based Parameter.**
   Trung Nguyen, Sylvia Do, Radhika Mishra
   Faculty: Brooke Lustig

30. **Synthesis and Purification of TAR RNA and Tat Peptides from Bovine Immunodeficiency Virus.**
    Jonathan Grist, Heather Wright
    Faculty: Elaine D. Collins

31. **Cloning the Human Vitamin D Receptor into the pE-SUMOstar Expression Vector.**
    Lily Le, Aileen Espinoza, Amanda Rodriguez, Charae Gilbert, Mallory Kato
    Faculty: Elaine D. Collins

32. **Exploring Sticking Behavior of Water Vapor on Ice at Martian Conditions.**
    Brendan D. Mar
    Faculty Advisor: Bradley M. Stone
    Bruce D. Phebus, Laura T. Iraci, Anthony Colaprete (NASA Ames Research Center)

33. **Gel Encapsulation of Bromperoxidase.**
    John Kim, William Wung
    Faculty: Roy Okuda

34. **Effects of Gel Encapsulation on *Corallina vancouverensis* Acetone Powder (CVAP) Bromoperoxidase Activity.**
    William Wung, John Kim, Nophodol Angunsri, Christine Hoang
    Faculty: Roy Okuda

35. **Synthesis and Chemistry of Verdaazy Free Radicals.**
    Faculty: David Brook

36. **Using MATLAB to Model Complex Reactions.**
    Faculty: David Brook

37. **The First C-H Bond Enthalpy in Methane: A Molecular Modeling Exercise.**
    Nahal Nassabeh, Mark Tran
    Faculty: Patrick E. Fleming
38. **Hydroxyl Radical Attack on Chloroform: Searching for a Transition State for a Chlorine Removal Initial Step.**
Daniel Haber
Faculty: Patrick E. Fleming

39. **On the Effects of Carboxylate Rotation on the Molecular Orbitals of 2, 6 Pyradine Dicarboxylic Acid.**
Jeffrey Berry
Faculty: Patrick E. Fleming

**Department of Computer Sciences**

40. **Online Monitoring Using Wireshark.**
Sathya Anandan
Faculty: Mark Stamp

41. **Buffer Overflow for Virus Entry Point Obfuscation.**
Ronak Shah
Faculty: Mark Stamp

42. **Evading Active Botnet Detection.**
Kenny Zhang
Faculty: Mark Stamp

43. **Improving Spam Classification Times Using Multiple Instance Classifiers.**
Nicolas Lee
Faculty: Teng Moh

44. **Routing in Mobile Ad-hoc Networks.**
Katherine Isaacs, Julie Hsieh
Faculty: Melody Moh

45. **Enhanced Cross-Layer Handoff for Mobile Wimax.**
Pat Jangyodsuk, Phuong Huynh.
Faculty: Melody Moh

**Department of Geology**

46. **A Petrographic Link Between the Late Cretaceous Pigeon Point Conglomerate and Felsitic Volcanic Rocks Near Pescadero, California.**
Anne Sanquini
Faculty: Ellen P. Metzger
Moss Landing Marine Laboratories

47. Don't Be Scared, Just Swim Away: the C-start Escape Response in Four Species of Surfperches (Embiotocidae) From Central California.
Benjamin M. Perlman
Faculty: Lara Ferry-Graham

Department of Meteorology and Atmospheric Sciences

Shawn Padrick, Daisuke Seto
Faculty: Craig B. Clements

Department of Physics and Astronomy

49. An Interactive Exoplanet Transit Simulator.
Mark Templeton
Faculty: Monika Kress