



San José State
UNIVERSITY

**SJSU College of Science
Second Annual Student Research Day**

Many SJSU students work with College of Science faculty on original scientific research projects. The Student Research Day is a public display of some of the wide variety of research projects from all Departments in the College. The student researchers and faculty will be present to answer questions.

In addition, tours of specific laboratories in Duncan Hall will be available.

Friday, May 5, 2006

Duncan Hall (ground level)

PROGRAM

10:00am to Noon Poster Session One

Noon to 2pm Poster Session Two

Sponsored by:

SJSU College of Science
(www.science.sjsu.edu/)

POSTER SESSION ONE

10:00am to NOON

DEPARTMENT OF BIOLOGICAL SCIENCES

1. Infection Resistance of Biomaterial Grafts for Wound Repair.

Gina T. Giannini

Faculty: John T. Boothby

Collaborator: Eric E. Sabelman (VA Palo Alto Health Care System)

2. Population Genetics of the Deer Mice, *Peromyscus maniculatus*, from the Warner Mountains of California: One Lineage or Two?

Stephanie A. White, Stephanie MacDonald, Allison Ivancovich,

Faculty: Leslee A. Parr, John O. Matson

3. 5' noncoding region sequence characterization for all human rhinovirus prototype strains.

Ishmeet Kalra

Faculty: John Boothby, David Kiang

Collaborators: Shigeo Yagi, David Schnurr (California Department of Health Services)

4. A comparison of microbial diversity in terrestrial desert environments analogous to Mars.

Elaine Pressly Bryant, Monika Kress, Chris McKay

Faculty: Sabine Rech

5. Study of microbial diversity in three wetland ponds used to bioremediate agricultural drainage water.

Diana Simons

Faculty: Sabine Rech

DEPARTMENT OF CHEMISTRY

6. Importance of the Intermolecular Chiral Discriminatory Forces.

Uyen Le, Nicole M. Kosareff, Shruthi Reddy

Faculty: Gilles Muller

7. Quantitative Analysis of Surface Plasmon Sensor Response to Chemisorption: Organic Submonolayers on Au.

Arthur Cheng

Faculty: Roger Terrill, Yong Nam (Paul) Pak

8. Characterization of amino based columns and affinity columns.

Geeta Shetty

Faculty: Joseph Pesek, Maria Matyska-Pesek

9. Iron Terpyridyl Complexes with Phosphonic Acid Tethers: Synthesis and Electrochemistry.

Nathan Zuckerman

Faculty: Dan Straus, Roger Terrill, Wendy Fan

Collaborators: Chongwu Zhao, Bo Lei (USC)

DEPARTMENT OF GEOLOGY

10. High Resolution Analysis of 1906 Earthquake Intensities in the City of San Jose, California.

Nancy Shostak

Faculty: John W. Williams

11. Structures of the Swauk Basin and Teanaway Dike Swarm, Central Cascades, Washington.

Brigid Doran

Faculty: Robert Miller

DEPARTMENT OF MATHEMATICS

12. Modeling Astrophysical Accretion as a Dripping Handrail.

Arkajit Dey, Matthew Low, Efrem Rensi, Eric Tan, Jason Thorsen, Michael Vartanian, Weitao Wu

Faculty: Slobodan Simic

DEPARTMENT OF METEOROLOGY

13. Eyewall Evolution of Hurricane Katrina near Landfall Using NEXRAD Reflectivity and Radial Velocity Data.

Authors: Kim Campo

Faculty: Tom Rickenbach

14. IPCC Model Simulation of Future Climate Change in Southeast Asia.

Chakkrit Reamruk

Faculty: Eugene Cordero

DEPARTMENT OF PHYSICS

15. Magnetism Near and in the Vortex Cores of Cuprate Superconductors.

Barbara Launspach, Tahmina Imam, Victor Chikhani, Sarah Wihl

Faculty: Carolus Boekema

16. Laser Peening Effects on Stainless Steel Microstructure.

Tania Zaleski

Faculty: Ken Wharton

17. Holographic Fingerprint Sensor.

Natasha Supper

Faculty: Ramen Bahuguna

POSTER SESSION TWO
NOON to 2:00pm

DEPARTMENT OF BIOLOGICAL SCIENCES

18. Isolation and Mutation of the Mojastin gene.

Stephanie White, Renato Regalado

Faculty: Julio Soto

19. Genetic Characterization of a Burrowing Shrimp (*Neotrypaea californiensis*) for Population Management Plans.

Michael Doan, Kenji Kozuka, Michelle Soriano

Faculty: Leslee Parr

Collaborators: Brett Dumbauld (US EPA), Ted Dewitt (USDA), Tony D'Andrea (Oregon State)

20. Evaluation of Urinalysis Analyzers for Point of Care Testing.

Dana Kruezfeldt

Faculty: Mara Williams

21. Localization and Anchorage *cis*-acting Elements in *Hro-Twist* mRNA.

Hoan V. Tran, Stephanie A. Mandal

Faculty: Julio Soto

DEPARTMENT OF CHEMISTRY

22. Simulating Photoelectron Spectra Based *ab initio* Calculations of Molecular Structure.

Sharon Betterton, Adrienne Berka

Faculty Mentor: Patrick Fleming

23. Analysis of Human Vitamin D Receptor Residues That Form Hydrogen Bonding Interactions with the Three Hydroxyl Groups of 1, 25-Dihydroxyvitamin D₃.

M. D. Reddy, L. Stoyanova, A. Acevedo

Faculty: Elaine D. Collins

24. Effects of Crowding Agents on the Refolding of Lysozyme.

Jeannette Truong, Rebecca Bowen

Faculty: Daryl K. Eggers

25. Confinement Effects on the Structure of Polyadenylate.

Adna Halilovic

Faculty: Daryl K. Eggers

26. Residual Dipolar Couplings in Ultra-Thin Polymer Films: Effect of Film Thickness.

Faculty: John Logan

Collaborators: Dolores C. Miller, Mark H. Sherwood (both IBM-Almaden)

27. Synthesis and Characterization of Cellulose Based Chiral Stationary Phase for HPLC.

Bhavani Thadishetty

Faculty: Joseph J. Pesek, Maria Matyska-Pesek

28. Characterizing Features of Protein Structure by Sequence Entropy and Related Methods.

Aaron Hardin, Shalini Potluri, William Yeh, Siddharth Potnis, Sridhar Busani
Faculty: Brooke Lustig, Robert Fowler (SJSU Biology)

DEPARTMENT OF GEOLOGY

29. The Sentinel Granodiorite: Contact Relationships With Adjacent Plutons and the Case For Inclusion in the Tuolumne Intrusive Suite, Central Sierra Nevada Batholith, California.

Joseph M. Petsche
Faculty: Robert Miller

30. Quaternary Faulting of the Ajawatz Mountain Piedmont East of the Intersection of the Garlock and Southern Death Valley Fault Zones: Evidence for a Tapered-Wedge Model.

Jennifer Mendonca
Faculty: Paula Messina

DEPARTMENT OF METEOROLOGY

31. Synthesis of Mars Global Surveyor Observations of the 2001 Global Dust Storm on Mars: Implications for Atmospheric Dynamics.

John Noble
Faculty: Alison Bridger

MOSS LANDING MARINE LABORATORIES

32. *Pelvetiopsis* Recruitment and Intertidal Macroalgal Canopies.

Amber Szoboszlai
Faculty: Mike Graham

33. Microbial Ecology of Elkhorn Slough: Relation to Inorganic/Organic Nutrients.

Sara Smith
Faculty: Nick Welschmeyer

34. Effects of Entrainment and Thermal Increase on Bacteria and Phytoplankton in the Moss Landing Power Plant: What Blooms in the Plume?

Gala Wagner
Faculty: Nick Welschmeyer

35. Applications of rDNA ITS Sequence Analysis to Assess Inter- and Intraspecific Diversity in *Pseudo-nitzschia* Communities in Monterey Bay, CA.

Kendra Hayashi
Faculty: Nick Welschmeyer

DEPARTMENT OF PHYSICS

36. Stellar Variability in the Kepler Field of View .

Behrang Sadeghi and Kim Mjaseth
Faculty: Natalie Batalha

Additional Posters Available for Viewing

Additional research posters and displays are distributed in the hallways of Duncan Hall and you may view them at your convenience. In particular:

Department of Biological Sciences (south side, facing San Salvador St)

-Research Posters and Displays can be seen on Floors 2 to 6.

Department of Chemistry (north side, facing Paseo de San Antonio)

-Research Posters can be seen in the basement level and 6th floor

Department of Geology (north side, facing Paseo de San Antonio)

-Research Posters can be seen in the 4th floor

Department of Meteorology (north side, facing Paseo de San Antonio)

-Research Posters can be seen in the 6th floor

Laboratories Open for Visitation

The following laboratories will be open for viewing. Faculty and/or students will be present to explain their research and to answer questions. Please note that labs will be open only during the times indicated on the schedule below:

Department of Biological Sciences

10:30am to 11:30am Duncan Hall 544 Professor Julio Soto

11:30am to 1:00pm Duncan Hall 542 Professor Leslee Parr

Department of Chemistry

10:30am to 11:30am Duncan Hall 1 to 6 (basement) The Keck Facility for Chemical Research

12:30pm to 1:30pm Duncan Hall 1 to 6 (basement) The Keck Facility for Chemical Research

About the Sponsor's of the Student Research Day



San José State
UNIVERSITY

San Jose State University's College of Science

The College of Science (COS) transforms its majors into qualified science professionals for a global and regional Silicon Valley work force, and prepares them for advanced (graduate) training and life-long learning. Core science education is provided for engineers, health care professionals, K-12 teachers, and other technical fields, as well as basic mathematics and science skills to students in on-science majors. Our students are instilled with a general awareness of science and technology, necessary to be an informed citizen in our highly technical, culturally diverse society.

The mission of the COS is:

- To prepare students for rewarding careers in biological sciences, physical sciences, mathematics and computer science.
- To provide lower division core biology, chemistry, mathematics, meteorology, geology and physics courses for majors in other technical areas.
- To offer courses in quantitative reasoning and in the physical universe and its life forms that satisfy the University's general education requirements.
- To teach the discipline-specific courses for the science and mathematics teacher credential programs.

One of the ways that the College of Science prepares students for their post college work is to offer a wide range of opportunities to work with faculty on independent research projects. In support of these projects, College faculty obtained \$4.5 million in external funding in 2004. Students gain invaluable training, and in most cases work directly with the faculty member involved in the project.

For more information, please visit the College of Science website: <http://www.science.sjsu.edu/>

ACKNOWLEDGEMENTS

Many people contributed to the success of this event. Special thanks to Dean Vida Kenk (Interim Dean, COS) and Stan Vaughn (Facilities Manager, COS) and their staff for providing essential infrastructure and support. The SJSU Advancement Office (Nancy Bussani and staff) arranged publicity for this event.

Last but NOT least:

Thanks and congratulations to all the hard working undergraduate and graduate students, and their faculty advisors for their hard work and for sharing it with us today!