SJSU College of Science
Third 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.

Friday, May 4, 2007

Duncan Hall (ground level)
10:00am to Noon Poster Session I
Noon to 2pm Poster Session II

In addition, tours of specific laboratories will be available.
See Lab Tour schedule on Page 8.

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Session 1: 10am to noon

DEPARTMENT OF BIOLOGICAL SCIENCES

1. Identifying Source Populations of Burrowing Shrimp (*Neotrypaea californiensis*) for Population Management Plans.
Kenji Kozuka, Michael Doan, Veronica Chaidez
Faculty: Leslee Parr (SJSU), Anthony F. D'Andrea (Oregon State), Brett R. Dumbauld (USDA), Theodore H. Dewitt (USEPA)

2. Genetic Characterization of Dungeness Crab (Cancer magister)
Thalia E. Ohene-Nyako, Amy Litton, Michael Doan, Ginny Eckert
Faculty: Leslee Parr

3. Temporal Change of TM7 Bacterial Phylotypes in the Human Oral Flora.
Fernando Velasquez, Christina A. Penn, Carol L. Chaffee
Faculty: Cleber Ouverney

4. Is There a Trade-off Between Drought Avoidance and Drought Tolerance?
Amanda Shores
Faculty: Susan Lambrecht

5. The role of Secondary Structure in Localization and Anchorage of *Hro-Twist* mRNA.
Mehrin Farooq, Roberto Lleras, Hoan V. Tran, Stephanie A. Mandal
Faculty: Julio G. Soto

6. Protein Models of rMojastin Mutants as Predictors of Apoptosis Induction.
Brandon Gaytan, Victoria Tran, Stephanie A. White, Natalie Chavez
Faculty: Julio G. Soto

DEPARTMENT OF CHEMISTRY

7. Electrostatic Limits to Organomercaptan Submonolayer Formation.
Arthur Cheng
Faculty: Yong Nam (Paul) Pak (KNUE), Shaowei Chen (UCSC), Roger Terrill (SJSU)

8. Chiral Recognition of Amino Acids by Circularly Polarized Luminescence Spectroscopy.
Jamie Lunkley, Nicole M. Kosareff
Faculty: Gilles Muller

9. Capillary LC and Capillary Electrochromatography Using Hydride-based Stationary Phases.
Dipti Sukul
Faculty: Joe Pesek, Maria Matyska-Pesek

Session 1: 10am to noon

10. Open Tubular Capillary Electrochromatography of Proteins and Metalloproteins.
Vasudha Narula
Faculty: Joe Pesek, Maria Matyska-Pesek

11. HPLC of a Hydride-based C5 Stationary Phase Using an Evaporative Light Scattering Detector.
Jayasree Pindi Verkant
Faculty: Joe Pesek, Maria Matyska-Pesek

12. Mars Cloud Formation: Super Saturation Requirements for Nucleation under Various Conditions.
Bruce Phebus
Faculty: Brad Stone (SJSU), R.J. Reed (UC Davis), Anthony Colaprete and Laura Iraci (NASA-Ames)

13. Investigation of Cold Field Emission from Carbon Nanotube Films
Jessica Killian
Faculty: Brad Stone (SJSU), Cattien Nguyen (NASA-Ames)

14. Sequence Signatures and Packing for Multimeric Proteins.
Hema Lakkaraju, Shalini Potluri, Aaron Hardin
Faculty: Brooke Lustig

DEPARTMENT OF COMPUTER SCIENCE

15. An Improved Clustering Search Engine for Internet Based on Correlation.
Po Chih Chen
Faculty: Teng Moh

16. Finding the Right Keywords for the Target Audience.
Dimas Dwihananto
Faculty: Teng Moh

DEPARTMENT OF GEOLOGY

17. Structure and Implications of Eocene Dike Swarms in the Washington Cascades.
Brigid Doran, Zach I. Michels
Faculty: Robert Miller

DEPARTMENT OF MATHEMATICS

18. Classification of Small Matchwebs.
Katherine Shelley
Faculty: Tim Hsu

Session 1: 10am to noon

DEPARTMENT OF METEOROLOGY

19. Temperature Variations as Revealed by Climate Model Simulation in the Upper Troposphere and Lower Stratosphere.
Sium Tesfai, John Noble
Faculty: Eugene Cordero

20. Calfornia Surface Temperature Trends.
Wittaya Kessomkiat, Bereket Lebassi
Faculty: Eugene Cordero

MOSS LANDING MARINE LABORATORIES

21. Flow Cytometric Analysis of Phytoplankton in Elkhorn Slough.
Sarah R. Smith
Faculty: Nick Welschmeyer

DEPARTMENT OF PHYSICS

23. The Discovery of Eclipsing Binary Stars.
Kimberly Mjaseth
Faculty: Natalie Batalha

24. Spitzer Space Telescope Spectral Mapping of Galactic Star Forming Clouds: The Atomic-to-Molecular Transition In M17.
Mark Cordier
Faculty: Michael J. Kaufman (SJSU) and Mark G. Wolfire (U Maryland)

25. Minimizing Quantum Noise in Interferometric Measurements for Gravitational Wave Detection.
Charlotte Nix
Faculty: Peter Beyersdorf

Session 2: Noon to 2pm

DEPARTMENT OF BIOLOGICAL SCIENCES

26. Genetic Characterization of Dungeness Crab Recruiting into Glacier Bay, Alaska
Amy Littton, Thalia Ohene-Nyako,
Faculty: Leslee Parr (SJSU), Ginny Eckert (U. Alaska), Heidi Herter (U. Alaska), Curtis Roegner (NOAA/NMFS)

27. Environmental Model for Uncultivable Bacteria Associated with Human Periodontitis.
Carol L. Chaffee, Fernando Velasquez, Christina A. Penn
Faculty: Cleber Ouverney

28. Molecular Evolution of PIII-SVMP and RGD Disintegrin Genes from the Genus Crotalus.
Stephanie A. White
Faculty: Julio G. Soto

29. Do Mating System and Pollinator Preferences Vary with Habitat for *Leptosiphon bicolor* and *L. androsaceus* (Polemoniaceae)?
Dianne Joy Hughey
Faculty: Susan Lambrecht

30. The Relationship Between Floral Pigments and Floral Transpiration in *Leptosiphon bicolor* (Polemoniaceae).
Yen Quach
Faculty: Susan Lambrecht

DEPARTMENT OF CHEMISTRY

31. Empirical Relationship Between Helicity of D3 Lanthanide(III) Complexes and Circularly Polarized Spectra.
Naghmeh Esfandiari, King Do
Faculty: Gilles Muller

32. Toward a Deeper Understanding of the Hofmeister Series of Ion Effects: Vapor Pressure Osmometry Measurements.
Aaron R.W. Gilbert
Faculty: Daryl K. Eggers

33. Triglycine Solubility in Ionic and Nonionic Solutions: A Model of Protein Backbone Hydration.
Mei Foong Hwang
Faculty: Daryl K. Eggers

Session 2: Noon to 2pm

34. Si-H Bond Energy in Triethoxysilane.
Bridget Chen
Faculty: Patrick E. Fleming

35. pKa Calculations for Weak Acids.
Serena Delmundo
Faculty: Patrick E. Fleming

36. Modeling of Polymer Dynamics in Ultra-Thin Films: The Dihedral Angle Dependence of NMR Chemical Shielding.
Daniel T. Nieport
Faculty: John W. Logan

37. Donor Substituted Verdazyl Free Radicals: Molecules With a Bistable Electronic Structure?
Dallas Chambers
Faculty: David J.R. Brook

38. Self-Assembly and Solution Dynamics of Grid Complexes based on Hydrazone Ligands.
Meisam Moyasset
Faculty: David J.R. Brook

DEPARTMENT OF COMPUTER SCIENCE

39. Are Genetic Algorithms Effective At Solving the Multiple Sequence Alignment Problem on DNA and Amino Acid Sequences?
Amie Radenbaugh, Tom Austin
Faculty: Sami Khuri

40. A Web-driven Database of beta globin Mutations Leading to beta-Thalassemia.
Biology/CS 123B students
Faculty: Sami Khuri

41. Analysis and Enhancement of Apple's Fairplay DRM System.
Ramya Venkataramu
Faculty: Mark Stamp

42. P3P Privacy Enhancing Agent.
Hsu-Hui
Faculty: Mark Stamp

Session 2: Noon to 2pm

DEPARTMENT OF GEOLOGY

43. Structures of the Central Part of the Skagit Gneiss Complex, North Cascades, Washington.
Zach I. Michels (SJSU) and N. McLean (MIT)
Faculty: Robert Miller

44. Structural Geology of the Skagit Gneiss Complex (SGC), North Cascades, Washington.
Erin Shea, Zach I. Michels (SJSU) and N. McLean (MIT)
Faculty: Robert Miller

DEPARTMENT OF METEOROLOGY

45. Synthesis of Mars Global Surveyor Observations of the 2001 Global Dust Storm on Mars: Implications for Atmospheric Dynamics.
John Noble
Faculty: Alison Bridger

46. Analysis of Land Versus Ocean Radar-Derived South Florida Rainfall Data During CRYSTAL-FACE.
Scott Renfel
Faculty: Tom Rickenbach

DEPARTMENT OF PHYSICS

47. Synthesis and Magnetic Properties of Monodisperse Fe_3O_4 Nanoparticles.
Maninder Kaur
Faculty: Kiumars Parvin

48. Miniaturization of a Fiber Optic Fingerprint Sensor.
John Yiu
Faculty: Ramen Bahuguna

49. Magnetic Ordering in PrBa2Cu3O7 by MaxEnt Muon-Spin Research
Hanh Pham, Laila Rafik
Faculty: Carolus Boekema