

Projects #1- 73 are from Graduate Students

Entry Number 1 GL

GSP-3 AND GSP-4 ARE IMPORTANT FOR *C. ELEGANS* SPERM MEIOSIS

By: Susan Mirsoian and Dr. Diana Chu
Cell and Molecular Biology
Faculty Advisor: Dr. Diana Chu

Entry Number 2 GL

SOMITE FORMATION OCCURS IN A DORSAL-TO-VENTRAL PROGRESSION IN *XENOPUS LAEVIS*

By: Minh Ho, Bonnie Afonin, and Dr. Carmen Domingo
Cell and Molecular Biology
Faculty Advisor: Dr. Carmen Domingo

Entry Number 3 GL

ROLES OF SWRAB GENE IN MOTILITY OF *BACILLUS SUBTILIS*

By: Diana Marina
Cell and Molecular Biology
Faculty Advisor: Dr. Leticia Marquez-Magaña

Entry Number 4 GL

IDENTIFICATION OF SIGNALS THAT REGULATE *GSH1* PROMOTER ACTIVITY

By: Nilu Prasad and Daniel Bravo
Cell and Molecular Biology
Faculty Advisor: Dr. Robert M. Ramirez

Entry Number 5 GL

TRANSCRIPTIONAL REPRESSOR ATF3 BINDS TO THE MIP-1 β PROMOTER IN MACROPHAGES

By: Roberto Barrozo
Cell and Molecular Biology
Faculty Advisor: Dr. Steven Weinstein

Entry Number 6 GL

TYPING OF HUMAN ENTEROVIRUSES: A MOLECULAR APPROACH

By: Elly Chou, Dr. David Kiang (California State Department of Health Services), Lauren Wold (CSDHS), Elain Yeh (CSDHS),
Dr. Lily Chen, and Dr. David Schnurr (CSDHS)
Biomedical Laboratory Science
Faculty Advisor: Dr. Lily Chen

Entry Number 7 GL

DOES HIV-1 TAT PROTEIN IMPACT THE ERROR RATE OF RNA POLYMERASE II

By: Lala Mothabi and Vikashi Jethwani
Cell and Molecular Biology
Faculty Advisor: Dr. Joseph Romeo

Entry Number 8 GL

TRANSCRIPTIONAL INTERFERENCE CAN INDUCE LATENCY IN HIV-1- AND SIMMAC239-INFECTED PBMCS

By: Vikash Jethwani
Biomedical Laboratory Science
Faculty Advisor: Dr. Joseph Romeo

Entry Number 9 GL

DIVERENT ROLES FOR PAX3 AND PAX7 IN THE DEVELOPING CHICKEN EMBRYO

By: Rachel Kadzik, Lisa Galli, and Tiffany Barnes
Cell and Molecular Biology
Faculty Advisor: Dr. Laura W. Burrus

Entry Number 10 GL

**ANALYSIS OF THE INTERACTIONS BETWEEN WNT-3A AND
WNT-5B SIGNALING PATHWAYS DURING CHICK DEVELOPMENT**

By: Yurixsa Martinez, Katie Sanders, Marina Meyerzon, and Dr. Laura W. Burrus
Cell and Molecular Biology
Faculty Advisor: Dr. Laura W. Burrus

Entry Number 11 GL

XA21-MEDIATED DISEASE RESISTANCE IN RICE

By: Alain Oyafuso
Cell and Molecular Biology
Faculty Advisor: Dr. Maureen Whalen

Entry Number 12 GL

MECHANISM OF ACTION OF THE XANTHOMONAS EFFECTOR EARLY CHLOROSIS FACTOR

By: Dante Placido, Dr. Christina Morales, Dr. Jyothi Rajagopal, Chris Lowe, Sandhya Bohini, and Peggy Lau
Cell and Molecular Biology
Faculty Advisor: Dr. Maureen Whalen

Entry Number 13 GL

NEURAL GROWTH AND THE SCN DURING THE ONSET OF PUBERTY

By: Susie Fong
Physiology and Behavioral Biology
Faculty Advisor: Dr. Christopher Moffatt

Entry Number 14 GL

TIME COSTS AND SAMPLING EFFICIENCIES FOR DIFFERENT SIZED AND SHAPED QUADRATS

By: Jennifer Carah, Anastasia Chavez, Lucas Bohnett, and Dr. Ed Connor
Ecology and Systematic Biology
Faculty Advisor: Dr. Edward Connor

Entry Number 15 GL

REEVALUATING THE FACELINIDAE: SYSTEMATICS AND PHYLOGENY

By: Jamie M. Chan and Dr. Terrence M. Gosliner
Ecology and Systematic Biology
Faculty Advisor: Dr. Terry Gosliner

Entry Number 16 GL

**BEEES IN SAN FRANCISCO: PARK CHARACTERISTICS
AS EXPLANATORY VARIABLES OF SPECIES RICHNESS AND ABUNDANCE**

By: Cynthia Fenter and Dr. Gretchen LeBuhn
Ecology and Systematic Biology
Faculty Advisor: Dr. Gretchen LeBuhn

Display Only Project Number 17

RESPONSES OF HERBIVOROUS CICHLID FISHES TO ANTHROPOGENIC SEDIMENTATION IN LAKE TANGANYIKA

By: Danielle Gilbert, P.B. McIntyre, E. Michel, M. Mulongaibalu, J. Sapp
Biology
Faculty Advisor: Dr. Ellinor Michel (The Natural History Museum, London, England)

Display Only Project Number 18

A COMPARATIVE POLLINATION STUDY OF THREE DIFFERENT SEXUAL SYSTEMS IN THE GENUS ERIOGONUM

By: Steven Santos
Ecology and Systematic Biology
Faculty Advisor: Dr. Kim Steiner

Entry Number 19 GL

**PREVALENCE AND PHYLOGENETICS OF BLOOD PARASITES
IN CALIFORNIA SPOTTED OWLS, *STRIX OCCIDENTALIS OCCIDENTALIS***

By: Heather Lannie
Conservation Biology
Faculty Advisor: Dr. Ravinder Sehgal

Entry Number 20 GL

**Ah RECEPTOR SEQUENCE VARIATION FROM SHINER SURFPERCH (*CYMATOGASTER AGGREGATA*) POPULATIONS
IN POLYCHLORINATED BIPHENYL CONTAMINATED AND REFERENCE SITES AROUND SAN FRANCISCO BAY**

By: Jeff Schinske and Dr. Sarah Cohen
Ecology and Systematic Biology
Faculty Advisor: Dr. Sarah Cohen

Entry Number 21 GL

**COMPARISON OF PRELIMINARY EXPRESSION DATA OF
THE MAJOR HISTOCOMPATIBILITY COMPLEX (Mhc) IN *FUNDULUS HETEROCLITUS***

By: Molly Klein-McDowell
Ecology and Systematic Biology
Faculty Advisor: Dr. Sarah Cohen

Entry Number 22 GL

**A COMPARISON OF IMMUNOGENETIC PROFILES BETWEEN PCB CONTAMINATED AND REFERENCE ATLANTIC
KILLIFISH (*FUNDULUS HETEROCLITUS*) POPULATIONS**

By: Joelle Tirindelli
Marine Biology
Faculty Advisor: Dr. Sarah Cohen

Entry Number 23 GL

COMPUTER SIMULATION OF YOUNG FISH & SHRIMP MIGRATION INTO SAN FRANCISCO ESTUARY

By: Renny Talianchich
Marine Biology
Faculty Advisor: Dr. Wim Kimmerer

Entry Number 24 GL

GEOGRAPHIC VARIATION IN AGE COMPOSITION OF KELP ROCKFISH (*SEBASTES ATROVIRENS*)

By: Lisa Krigsman
Marine Biology
Faculty Advisor: Dr. Ralph Larson

Entry Number 25 GL

**LATITUDINAL VARIATION IN TRANSCRIPTOME PROFILES FOLLOWING HEAT AND
COLD STRESS IN THE PORCELAIN CRAB, *PETROLISTHES CINCTIPES***

By: Elizabeth Moore
Marine Biology
Faculty Advisor: Dr. Jonathon Stillman

Entry Number 26 GL

MASS SPECTROMETRY, ELISA AND FARNESYLATION OF PEPTIDES WITH A C-TERMINAL CAAX MOTIF

By: Rose Mary Paw
Biomedical Laboratory Science
Faculty Advisor: Dr. Diana Smith-Beckerman

Entry Number 27 GL

**ISOPRENYLATED PROTEINS FROM WILDTYPE AND KNOCKOUT MOUSE EMBRYO FIBROBLASTS DEFICIENT IN CAAX
PROCESSING ENZYMES**

By: Xichen Li and Glen E. Walton Jr. (City College of San Francisco)
Biomedical Laboratory Science
Faculty Advisors: Dr. Diana Smith-Beckerman and Dr. Lily Chen

Entry Number 28 GL

**INVESTIGATION OF SUBSTRATE SPECIFICITY AT THE P1' SITE OF
TRYPSIN MUTANTS USING FLUORESCENCE RESONANCE ENERGY TRANSFER**

By: Paul Carver
Biochemistry
Faculty Advisor: Dr. Teaster Baird

Entry Number 29 GL
LIGAND BINDING INTERACTIONS MODULATING THE SUBSTRATE SPECIFICITY OF DIAMINE OXIDASE
By: Creobelle Guzman and David Elgart
Biochemistry
Faculty Advisor: Dr. George T. Gassner

Entry Number 30 GL
EXPLORING THE EFFECTS OF CONDITION PARAMETERS ON NEURONAL NITRIC OXIDE SYNTHASE USING MULTICHANNEL TIME-RESOLVED OPTICAL ABSORPTION FOLLOWING CARBON MONOXIDE PHOTOLYSIS
By: Latevi Lawson, Russ Jensen, Michael Minton, and Dr. Raymond M. Esquerra
Chemistry
Faculty Advisor: Dr. Raymond M. Esquerra

Entry Number 31 GL
REDUCTION AND IMMOBILIZATION OF SELENATE BY ZEROVALENT IRON
By: Ayako Suzuki and Dr. Bruce A. Manning
Chemistry
Faculty Advisor: Dr. Bruce A. Manning

Entry Number 32 GL
SYNTHESIS AND CHARACTERIZATION OF DI-SUBSTITUTED TETRAPHENYLPORPHYRINS
By: Lenin Parrales
Chemistry
Faculty Advisor: Dr. Ursula Simonis

Entry Number 33 GP
BIASING RESPONSE IN FITTS LAW TASKS
By: Emory Al-Imam
Computer Science
Faculty Advisor: Dr. Edward Lank

Entry Number 34 GP
FUR BALL NAVIGATION SYSTEM
By: Haishi Bai, Greydon Buckley, Mark Howard, and Greydon Buckley
Computer Science
Faculty Advisor: Dr. Edward Lank

Entry Number 35 GP
MS2DB: AN ALGORITHMIC APPROACH TO DETERMINE DISULFIDE LINKAGE PATTERNS IN PROTEINS BY UTILIZING TANDEM MASS SPECTROMETRIC DATA
By: Timothy Lee and Alex Chavez
Computing for Life Science
Faculty Advisor: Dr. Rahul Singh

Entry Number 36 GP
CROSS-MODAL INFORMATION RETRIEVAL
By: Bibek Bhattarai and Brian Zambrano
Computer Science
Faculty Advisor: Dr. Rahul Singh

Entry Number 37 GP
STRUCTURAL QUERYING IN MOLECULAR DATABASES
By: Emmanuel R. Yera and Elinor Velasquez
Computer Science
Faculty Advisor: Dr. Rahul Singh

Entry Number 38 GP
EVENT-BASED PERSONAL MULTIMEDIA MANAGEMENT
By: Juan Camilo Pinzon
Computer Science
Faculty Advisor: Dr. Rahul Singh

Entry Number 39 GP

MULTIPLE-PERSPECTIVE INTERACTIVE WEB SEARCH

By: Ya-Wen Hsu and Naureen Moon

Computer Science

Faculty Advisor: Dr. Rahul Singh

Entry Number 40 GP

SPARK: SIMILAR PICTURE AND RELATIONSHIP KONSTRUCTOR

By: Scott Bishop, Jensen Galan, Chongyong Fei, and Stacie Riddle

Computer Science

Faculty Advisor: Dr. Rahul Singh

Entry Number 41 GP

FREEFLOW: DATABASES AND INTERFACES FOR ENABLING DRUG DISCOVERY

By: Tammy Chan, Preeti Malik, Elinor Velasquez, and Emmanuel R. Yera

Computer Science

Faculty Advisor: Dr. Rahul Singh

Entry Number 42 GP

PHENOTYPE AND DISCOVERY AND PATTERN RECOGNITION

By: Andreas Falley, Mark Howard, and Jose Eguizabal

Computing for Life Science

Faculty Advisor: Dr. Rahul Singh

Display Only Project Number 43

LINUX KERNEL TUNING AND EXPERIMENTAL VERIFICATION USING NS 2 SIMULATOR

By: Jaslin Sekhon

Computer Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 44 GP

LINUX 2.6 TCP BUFFER TUNING

By: Onkar Lalla

Computer Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 45 GP

SEMANTIC MAPPING NIH NCBI DTDS

By: Vien Tran

Computer Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 46 GP

WEB SERVICES JOINS USING ER DESIGN TOOL XML DATABUS

By: Yan Liu

Computing for Life Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 47 GP

TCP OVER WIRELESS

By: Niveditha Thondoti

Computer Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 48 GP

ONLINE STREAMING MULTIMEDIA OVER MULTICAST

By: Aizaz Hakro

Computer Science

Faculty Advisor: Dr. Marguerite Murphy

Entry Number 49 GP
PARTS, IMAGE, AND SKETCH-BASED MODELING METHOD FOR DOMAIN EXPERTS
By: Tracie Hong and Jun Murakawa
Computer Science
Faculty Advisor: Dr. Ilmi Yoon

Entry Number 50 GP
PACKET SNIFFING
By: Deepthi Shetty
Electrical Engineering
Faculty Advisor: Dr. Todor Cooklev

Entry Number 51 GP
IMPLEMENTATION AND PERFORMANCE OF MIMO OFDM
By: Sathya Sekhar
Electrical Engineering
Faculty Advisors: Dr. Todor Cooklev and Dr. Shysheng Liou

Entry Number 52 GP
TWO-TIERED WIRELESS SENSOR NETWORKS
By: Yi-Chia Liao
Computer Engineering
Faculty Advisor: Dr. Todor Cooklev

Display Only Project Number 53
**SMART ANTENNAS TECHNOLOGY: ADAPTIVE FILTER BANKS:
REDUCING INTERFERENCE IN WIRELESS COMMUNICATION SYSTEMS**
By: Shalini Tripathi
Computer Engineering
Faculty Advisor: Dr. Todor Cooklev

Display Only Project Number 54
ROBUST SENSE-AMPLIFIER DESIGN IN NANO-SCALE CMOS TECHNOLOGY
By: Joyce Yeung
Engineering
Faculty Advisor: Dr. Hamid Mahmoodi

Entry Number 55 GP
DESIGN OF COMPLEX FILTER BANKS AND ITS APPLICATION TO WAVELET BASED OFDM
By: Hima Gariney
Electrical Engineering
Faculty Advisor: Dr. Todor Cooklev

Entry Number 56 GP
COGNITIVE RADIO FOR WIRELESS SENSOR NETWORKS
By: Wei Wang
Electrical Engineering
Faculty Advisor: Dr. Todor Cooklev

Entry Number 57 GP
THE MORPHOLOGICAL EFFECT OF VARIABLE FLOW ON A MEANDERING CHANNEL MODEL
By: Glen Leverich
Geology
Faculty Advisor: Dr. Leonard Sklar

Entry Number 58 GP
**GEOLOGIC AND GEOMORPHIC SURFACE MAPPING ALONG
THE SOUTHERN DEATH VALLEY FAULT ZONE, SOUTHEASTERN CALIFORNIA**
By: Heather Lackey
Geology
Faculty Advisor: Dr. John Caskey

Entry Number 59 GP
THE EVOLUTION OF TAFONI ON SANDSTONE IN COASTAL AREAS OF NORTHERN CALIFORNIA

By: Jonathan Boxerman
Geology
Faculty Advisor: Dr. Ray Pestrong

Entry Number 60 GP
QUANTIFYING BEACH RESPONSE TO EPISODIC LARGE WAVE EVENTS OCEAN BEACH, SAN FRANCISCO

By: Jeff Hansen
Geology
Faculty Advisor: Dr. Toby Garfield

Entry Number 61 GP
THE COLORING INVARIANT OF KNOTS AND TANGLES

By: Candice Price
Mathematics
Faculty Advisor: Dr. Mariel Vazquez

Entry Number 62 GP
ITERATIVE CONSTRUCTIONS OF TIGHT FRAMES

By: Mizue Horiuchi
Mathematics
Faculty Advisor: Dr. Shidong Li

Entry Number 63 GP
FRONT SIDE ETCHING OF SILICON WAFERS USING XENON DIFLUORIDE

By: Ricky Leung
Physics
Faculty Advisor: Dr. Barbara Neuhauser

Entry Number 64 GP
REMNANT GAUGE SYMMETRY BREAKING AND THE PHASE STRUCTURE OF GAUGE-HIGGS THEORIES

By: William Caudy
Physics
Faculty Advisor: Dr. Jeff Greensite

Entry Number 65 GP
FIRST EVIDENCE OF A PRECESSING JET EXCAVATING A PROTOSTELLAR ENVELOPE

By: Jason E. Ybarra, Dr. Mary Barsony, Karl E Haisch, Jr. (UVSC), Thomas H. Jarrett (IPAC),
Raghvendra Sahai (JPL), and Alycia J. Weinberger (Carnegie)
Physics and Astronomy
Faculty Advisor: Dr. Mary Barsony

Entry Number 66 GP
**UNUSUAL LOW-MASS WHITE DWARFS IN
THE DENSE STAR CLUSTER NGC 6397: SIGNS OF STELLAR COLLISIONS?**

By: Rachel Strickler, Dr. Adrienne Cool, Lilianna Lopez, Dr. Jay Anderson (Rice University),
Dr. Haldan Cohn (Indiana University), and Dr. Phyllis Lugger (Indiana University)
Astronomy
Faculty Advisor: Dr. Adrienne Cool

Entry Number 67 GP
**EVOLUTION OF DETACHED AND INTERACTING BINARY STARS IN
A CROWDED MILKY WAY STAR CLUSTER**

By: Lilianna I. Lopez, Dr. Adrienne M. Cool, Rachel Strickler, Dr. Jay Anderson (Rice University),
Dr. Phyllis Lugger (Indiana University), and Dr. Haldan Cohn (Indiana University)
Physics
Faculty Advisor: Dr. Adrienne Cool

Entry Number 68 GP
SLOAN DIGITAL SKY SURVEY IMAGES AND THE GALAXY LUMINOSITY FUNCTION

By: Jessica Fielder and JoEllen McBride
Physics and Astronomy
Faculty Advisor: Dr. Ronald Marzke

Entry Number 69 GP
IMPROVING STELLAR VELOCITY ANALYSIS AT LICK OBSERVATORY - OLD DATA, NEW PLANETS

By: David Abouav
Astronomy
Faculty Advisor: Dr. Debra Fischer

Entry Number 70 GP
A SEARCH FOR AN ATMOSPHERIC SIGNATURE OF THE EXOPLANET HD 149026b

By: Nassim Bozorgnia
Physics
Faculty Advisors: Dr. Debra Fischer and Dr. Chris McCarthy

Entry Number 71 GP
THE ORBITS OF EXTRASOLAR PLANETS

By: Peter Driscoll, Dr. Debra Fischer, and Dr. Eric Ford (UC Berkeley)
Physics
Faculty Advisor: Dr. Debra Fischer

Entry Number 72 GP
SEARCHING FOR OTHER SOLAR SYSTEMS

By: Raman Narayan
Physics and Astronomy
Faculty Advisor: Dr. Debra Fischer

Entry Number 73 GP
TEMPERATURE VARIATIONS IN PLANET BEARING STARS

By: Raj Sareen
Physics and Astronomy
Faculty Advisor: Dr. Debra Fischer

Projects #74- 149 are from Undergraduate Students

Entry Number 74 UL
**NON-PSYCHOACTIVE CANNABINOID CONSTITUENTS ARE INHIBITORS OF
AGGRESSIVE HUMAN BRAIN CANCERS *IN VITRO***

By: Jahan Marcu, Rigel T. Christian (CPMC), and Dr. Sean D. McAllister (CPMC).
Cell and Molecular Biology
Faculty Advisor: Dr. Laura W. Burrus

Entry Number 75 UL
FRIZZLED-10 IS REQUIRED FOR THE EXPANSION OF THE DORSAL NEURAL TUBE DURING CHICK DEVELOPMENT

By: Joseph Ramahi
Cell and Molecular Biology
Faculty Advisor: Dr. Laura W. Burrus

Entry Number 76 UL

IS THE NIGHT TIME THE RIGHT TIME: NIGHT AND DAY BLOOMING DISCRETE GENE IN SUBSPECIES OF LINANTHUS DICHOTOMUS (POLEMONEACEAE)

By: Mariela Pauli, Sally Chess, and Dr. Gretchen LeBuhn
Cell and Molecular Biology
Faculty Advisor: Dr. Gretchen LeBuhn

Entry Number 77 UL

OPTIMAL EXPANSION OF PRIMARY HIV-1 FOR USE IN SUPPORTIVE IMMUNOTHERAPY IN NEWBORNS

By: Chris Lai Hipp
Cell and Molecular Biology
Faculty Advisor: Dr. Girish Vyas (UCSF)

Entry Number 78 UL

GENETIC INTERACTION BETWEEN CDC24 AND CHECKPOINT MUTANTS IN FISSION YEAST

By: Kadra Ahmed
Cell and Molecular Biology
Faculty Advisor: Dr. Sally Pasion

Entry Number 79 UL

METAL COMPLEXES OF USNIC ACID DERIVATIVES

By: Lisa Offringa
Botany
Faculty Advisors: Dr. Margareta Sequin and Dr. Scott Gronert (Chemistry & Biochemistry)

Entry Number 80 UL

YOPJ FAMILY OF BACTERIAL PATHOGEN EFFECTORS; CELL AND MOLECULAR BIOLOGICAL ANALYSIS OF FUNCTION OF HOMOLOGUES IN HETEROLOGOUS HOST-PATHOGEN INTERACTIONS.

By: Ageliki Tzovolos
Cell and Molecular Biology
Faculty Advisor: Dr. Maureen Whalen

Entry Number 81 UL

PERSPECTIVES AND EXPERIENCES OF MINORITY FACULTY

By: Sha Jones, Dr. Megan Mahoney (UCSF), Dr. Elisabeth Wilson (UCSF), and Portia Daniels
Biology
Faculty Advisor: Dr. Frank Bayliss

Entry Number 82 Display Only Project

A CONSERVED HISTONE H2A VARIANT IMPORTANT FOR FERTILITY

By: Jason Randolph
Cell and Molecular Biology
Faculty Advisor: Dr. Diana Chu

Entry Number 83 UL

IDENTIFICATION OF SAN FRANCISCO BAY COLONIAL BOTRYLLID ASCIDIANS WITH THE USE OF 3 GENETIC LOCI AND DIGITAL FILMING OF SPECIES-SPECIFIC ALLORECOGNITION BEHAVIORS

By: Patrick S. Lee and Karen Alroy
Marine Biology & Limnology
Faculty Advisor: Dr. Sarah Cohen

Entry Number 84 UL

SKELETAL MUSCLE FIBER TYPE AND CROSS-SECTIONAL AREA IN PATIENTS WITH END-STAGE RENAL DISEASE AFTER 6 MONTHS OF HEMODIALYSIS OR KIDNEY TRANSPLANTATION

By: Angeles Rios, Dr. Eric Butz (UCSF), and Dr. Kimberly Topp (UCSF)
Physiology and Behavioral Biology
Faculty Advisor: Dr. Wilfred Denetclaw

Entry Number 85 UL

**ECTOPIC LIPS IN THE CENTRAL DERMOMYOTOME REGION OF
THE SOMITE INDUCE MYOTOME FORMATION IN CHICK EMBRYO**

By: Yanfei Ma, HaNam Nguyen, Karen Berry, Andrei Odobescu, and Dr. Wilfred Denetclaw
Microbiology

Faculty Advisor: Dr. Wilfred Denetclaw

Entry Number 86 UL

THE MAPK SIGNALING CASCADE IN SKELETAL MYOGENIC DEVELOPMENT IN CHICKEN EMBRYOS

By: Natasha Chandiramani, Jared Greenberg, Seung Jong Lee, Patricia Powell, and Dr. Wilfred Denetclaw
Cell and Molecular Biology

Faculty Advisor: Dr. Wilfred Denetclaw

Entry Number 87 UL

**YEAR CLASS STRENGTH OF OLIVE ROCKFISH (SEBASTES SERRANOIDES)
IN SOUTHERN CALIFORNIA - A COOL WATER SPECIES?**

By: Tom Calvanese

Marine Biology & Limnology

Faculty Advisor: Dr. Ralph Larson

Entry Number 88 UL

2-D DIGE ANALYSIS OF *YERSINIA PESTIS* STRAIN VARIABILITY IN MOUSE LUNG TISSUE

By: Rachele Bermingham

Physiology and Behavioral Biology

Faculty Advisor: Dr. Christopher Moffatt and Dr. Sandra L. McCutchen-Maloney (Lawrence Livermore National Laboratory)

Entry Number 89 UL

A GRAPHICAL USER INTERFACE FOR ANALYZING KINETIC ABSORPTION DATA FROM BIOLOGICAL SYSTEMS

By: Richelle Raagas and Arthur De Los Reyes

Biochemistry

Faculty Advisor: Dr. Raymond M. Esquerra

Entry Number 90 UL

THE EFFECT OF NONENZYMATIC GLYCATION ON THE NITRITE REDUCTASE ACTIVITY IN HUMAN HEMOGLOBIN

By: Chris Kehoe and Danny Tabari

Biochemistry

Faculty Advisor: Dr. Raymond M. Esquerra

Entry Number 91 UL

THE EFFECT OF CADMIUM ON SULFATE ASSIMILATION GENE EXPRESSION IN *ARABIDOPSIS THALIANA*

By: Jot Preet-Sahi

Biochemistry

Faculty Advisor: Dr. Jane G. DeWitt

Entry Number 92 UL

**THE EFFECT OF CADMIUM ON THE EXPRESSION OF GENES INVOLVED IN
PHYTOCHELATIN SYNTHESIS IN *ARABIDOPSIS THALIANA***

By: Ana I. Cervantes and Jot Preet-Sahi

Chemistry

Faculty Advisor: Dr. Jane G. DeWitt

Entry Number 93 UL

CLONING AND EXPRESSION OF STYRENE OXIDE ISOMERASE FROM *PSEUDOMONAS PUTIDA* S12

By: Alice Ngo

Biochemistry

Faculty Advisor: Dr. George T. Gassner

Entry Number 94 UL

**EXPRESSION AND CHARACTERIZATION OF PHENACETALDEHYDE DEHYDROGENASE FROM
THE STYRENE CATABOLIC PATHWAY**

By: Maryam Naseri-Jabari, Shahram Emami, and Dr. George T. Gassner

Biochemistry

Faculty Advisor: Dr. George T. Gassner

Entry Number 95 UL
THE EFFECTS OF PESTICIDES ON THE ACTIVITY OF CYP3A4

By: Caroline Bush and Hung Tieu
Biochemistry
Faculty Advisor: Dr. Nancy Gerber

Entry Number 96 UL
THE ROLE OF MANT-GTP IN SGC

By: Jasmin Kristianto, Jeff Tinianow, Yu Shi Chan, Sharon Woo, Paula Garay, and John Sczepaniak
Biochemistry
Faculty Advisor: Dr. Nancy Gerber

Entry Number 97 UL
**P-450 AND SPINNICH FERREDOXIN WITH ISOPENTENYL ADNINE AND
ADENOSINE KINETICS VIA UV/VIS SPECTROSCOPY**

By: John Sczepaniak
Biochemistry
Faculty Advisor: Dr. Nancy Gerber

Entry Number 98 UL
DESIGNING PROBE AND PRIMER SET

By: Dmitriy Zherebnekov
Biochemistry
Faculty Advisor: Dr. Elizabeth A. Runquist

Entry Number 99 UL
THE EFFECT OF EXERCISE ON ACETYL COA CARBOXYLASE 1 AND MALOMYL COA DECARBOXYLASE

By: John Bui
Biochemistry
Faculty Advisor: Dr. Elizabeth A. Runquist

Entry Number 100 UL
CONFORMATIONAL CHANGES OF HEAT SHOCK PROTEIN-90 MAY REVEAL PROTEIN FUNCTION

By: Bess-Carolina Dolmo, Kristin Krukenberg (UCSF), Carol Cho (UCSF),
and Dr. David Agard (UCSF)
Chemistry
Faculty Advisors: Dr. David Agard (UCSF) and Dr. Raymond A. Esquerra

Entry Number 101 UL
CAN HYDRODYNAMICS PREDICT THE DIFFUSION PROPERTIES OF AMINO ACIDS?

By: Jared Thompson
Chemistry
Faculty Advisor: Dr. Sergio Aragon

Entry Number 102 UL
INHIBITORS FOR PSMA: APPLICATION IN IMAGING/THERAPY OF PROSTATE CANCER

By: Jacinda-Chau Do and Yoko Toriyabe
Biochemistry
Faculty Advisor: Dr. Clifford Berkman

Entry Number 103 UL
ALKALI METAL DOPED ZEOLITES AS A SOLID STATE REDUCING AGENT

By: Christine So
Chemistry
Faculty Advisor: Dr. Andrew Ichimura

Entry Number 104 UL
**UV SPECTRAL LIBRARY SEARCH OF CAFFEINE, PHENYLALANINE, AND SODIUM BENZOATE IN DIET SODA
USING REVERSED-PHASE HPLC PHOTODIODE ARRAY DETECTION**

By: Ghoncheh Angha and Anvi Parikh
Biochemistry
Faculty Advisors: Dr. Bruce Macher, Dr. Teaster Baird, and Meden Isaac

Entry Number 105 UL
TETRAPHENYL PORPHYRINS FOR USE IN PHOTODYNAMIC THERAPY (PDT)

By: Kip Conner, Dr. Ursula Simonis, Meden Isaac, and Dr. Tomasso Vannelli
Chemistry
Faculty Advisor: Dr. Ursula Simonis

Entry Number 106 UL
PORPHYRIN SYNTHESIS

By: Valentina Tan, Angela Zare, Lori Bogner, Kip Conner, Sarah Kong, Betty Lau, Donald Lindsay, Meden Isaac, Lenin Parrales, Dr. Ursula Simonis, and Dr. Tommaso Vannelli
Chemistry
Faculty Advisor: Dr. Ursula Simonis

Entry Number 107 UL
THE STABILITY OF 6-CARBANIONS OF URACIL AND PYRIDONES

By: Fong Ying Yeoh, Freeman M. Wong, and Christina Capule
Chemistry
Faculty Advisor: Dr. Weiming Wu

Entry Number 108 UP
DESIGN OF FOUNDATION FOR A CASINO

By: Robert DiJorio, Irma Martinez, Rhodel DeClaro, and Jon Lio
Civil Engineering
Faculty Advisor: Dr. Timothy D'Orazio

Entry Number 109 UP
FOUNDATION DESIGN FOR A SOCCER STADIUM

By: Yemane Haile, Matthew Chew, and Han Yao Chen
Civil Engineering
Faculty Advisor: Dr. Timothy D'Orazio

Entry Number 110 UP
DESIGNING THE JUBA RIVER EARTH DAM

By: Liz Hanley, Bonnie Kirkland, Sonia D'Silva, and Abdi Shaib
Civil Engineering
Faculty Advisor: Dr. Timothy D'Orazio

Entry Number 111 UP
AIM FOR ER (AUTONOMOUS IMMEDIATE MONITORING FOR EMERGENCY RESOURCE)

By: Atsede Ayalew, Terrence Gilfillian, Doan Ho, and Carolina Silva
Civil Engineering
Faculty Advisor: Dr. Elahe Enssani

Entry Number 112 UP
STEEL BRIDGE

By: Jose Leaños, Samson Ghedremeskel, Kin Tse, Poohong Louie, Joe Elemen, Glen Lin, and Brian Young
Civil Engineering
Faculty Advisor: Dr. Norman Owen

Entry Number 113 UP
DESIGN OF A REINFORCED CONCRETE PARKING STRUCTURE

By: Adrian Bello, Ralph Leyva, Jorge Narvaez, and Aron McKeag
Civil Engineering
Faculty Advisor: Dr. Wenshen Pong

Entry Number 114 UP
BLUE MOON BRIDGE (WOOD BRIDGE)

By: Sydney Chow, Andre Antonio, Robert Begonia, Ben Ceralde, Ben Ulvevadet, Merlito Coloma, Hung Nguyen, and Eric Lilly
Civil Engineering
Faculty Advisor: Dr. Wenshen Pong

Entry Number 115 UP
SANTA BARBARA POTABLE WATER PROJECT
By: Guy Halperin, James Shahamiri, and Gustavo Choto
Civil Engineering
Faculty Advisor: Dr. Wenshen Pong

Entry Number 116 UP
STEEL BUILDING DESIGN
By: Michael Pustov, Kevin Riley, John Santos, and Jonh Ayson
Civil Engineering
Faculty Advisor: Dr. Wenshen Pong

Entry Number 117 UP
CHIMES: AUDIBLE WAYFINDING
By: Mike A. Cary, Jacky Wong, and Steve Jain
Electrical Engineering
Faculty Advisor: Larry Klingenberg

Entry Number 118 UP
MP3 PLAYER
By: James Woo
Computer Engineering
Faculty Advisors: David Calkins and Dr. Thomas Holton

Entry Number 119 UP
PORTABLE MP3 PLAYER WITH A LCD DISPLAY AND A COMPACT FLASH MEMORY
By: Tae Kim and Juanita Flores
Computer Engineering
Faculty Advisor: David Calkins

Entry Number 120 UP
EPILEPTIC ANALYSIS AND DETECTION SCHEME
By: Ian Robertson
Computer Engineering
Faculty Advisors: Dr. Todor Cooklev and Dave Calkins

Entry Number 121 UP
PH PROCESS CONTROL
By: Yaw Ofori-Nyako and Samson Ahferom
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 122 UP
GPS LOCATOR
By: Charles Fung, Chen Li Wen, and Chi Iao
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 123 UP
ANIMAL DETERRENT
By: Naji Ghosseiri and Kevin McLaughlin
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 124 UP
THE ROBOTIC BARTENDER
By: Melissa Dagdagan
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 125 UP
THE TRACTION ELEVATOR AND CONTROL TECHNIQUES

By: Justin Hoffman and Mike F. Reinhard
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 126 UP
NATCAR, THE LINE FOLLOWING CAR
By: Eric Fitzpatrick and John Paul de Jesus
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 127 UP
AUTONOMOUS CAR
By: Khin Chew, Rosy Chan, and Wunna Chi
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 128 UP
WALL FOLLOWER
By: George Pahulu, Nicolette Drummond, and Desean Chambers
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 129 UP
HUMAN FOLLOWER ROBOT
By: Amir Segev-Sayag, Bill Ma, and Minh Truong
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 130 UP
COLOR-TRACKING CAR FOLLOWER
By: Rommel Agra, Henry Quinonez, and Ramanjot Singh
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number 131 UP
LINE FOLLOWER
By: Maryam Gulaid
Electrical Engineering
Faculty Advisor: Dr. Shyshenq Liou

Entry Number 132 UP
SUMO ROBOT
By: Austin Chin and Tommy Li
Computer Engineering
Faculty Advisor: David Calkins

Entry Number 133 UP
FIREFIGHTING ROBOT
By: Richard Ng, Sasha Spoor, Carmencita Picar, Chandra Maharian, and Alan Ho
Mechanical Engineering
Faculty Advisors: Dr. Michael Holden and Dr. Mamdouh Abo-El-Ata

Entry Number 134 UP
BEER BASH, A 120LB COMBAT ROBOT FOR ROBOGAMES 2006
By: Joshua Mehlman, Susan Reno, Jacob Harrington, Rosemary Villagomez,
Bruce White, and Avish Bharwani
Mechanical and Electrical Engineering
Faculty Advisors: Mike Strange and David Calkins

Entry Number 135 UP

4-ROTOR HELICOPTER

By: Brian Navasca, Camilo Jimenez, Michael Mercurio, and Yin Yin Wu
Mechanical Engineering

Faculty Advisors: Dr. Michael Holden and Dr. Mamdouh Abo-El-Ata

Entry Number 136 UP

CAST AND CATCH DISABLED PERSONS FISHING ROD

By: David Hefflefinger, Mike Kerans, and Irina Walsh
Mechanical Engineering

Faculty Advisors: Dr. Michael Holden and Dr. Mamdouh Abo-El-Ata

Entry Number 137 UP

ELASTOMER ENERGY BUFFER TO REPLACE A FRICTION CLUTCH

By: Thomas P. Alldredege, Prisa Chanthavong, and Eric L. Bura
Mechanical Engineering

Faculty Advisor: Dr. Ed Cheng

Entry Number 138 UP

MINI BAJA OFF-ROAD VEHICLE

By: Sean Finn, Randy Ruano, Aren Hofland, Shai Shaul, Matt Richards, and Juan Carlos Miranda
Mechanical Engineering

Faculty Advisors: Dr. Ed Cheng and Micheal Strange

Entry Number 139 UP

HOVER CRAFT (MADE OUT OF PVC)

By: Cianan Duncan
Mechanical Engineering

Faculty Advisor:

Entry Number 140 UP

COMPARISON OF COMPOSITE MATERIALS FOR HPV FAIRINGS

By: Erik Andrade, Thu Nguyen, and Peter Zheng
Mechanical Engineering

Faculty Advisor: Dr. Mamdouh Abo-El-Ata

Entry Number 141 UP

ZIRCON: LONG-LIVED RECORDER OF HIMALAYAN HISTORY

By: Yuko Mamiya, Dr. Mary Leech, and Johnathan Brown
Geology

Faculty Advisor: Dr. Mary Leech

Entry Number 142 UP

HYPERIMAGES

By: Pierre-Yves Corlobe and Cedric Massa
Computer Science

Faculty Advisor: Dr. Rahul Singh

Entry Number 143 UP

UNRAVELING THE UNKNOTTING OF TYPE II TOPOISOMERASES: EXAMINING RANDOM STATE CHANGES OF KNOTS

By: Janella Slaga
Applied Mathematics

Faculty Advisor: Dr. Mariel Vazquez

Entry Number 144 UP

USING CUBIC HOMOLOGY FOR PREDICTING BREAST CANCER PROGNOSIS FROM DNA COPY NUMBER DATA

By: Hong Y. Liang, L. Javier Hernandez (La Rioja University, Spain), and Dr. Joan Climent (UCSF)
Computer Science

Faculty Advisor: Dr. Javier Arsuaga (Mathematics)

Entry Number 145 UP
**DEVELOPING A WEB-BASED ENVIRONMENT FOR INTEGRATING BREAST CANCER OMICS DATA IN
THE CLINICAL SETTING**

By: Xiaoyu Hu, Hong Y. Liang, Yuhna Chae, and Dr. Joan Climent (UCSF)
Computer Science
Faculty Advisor: Dr. Javier Arsuaga (Mathematics)

Entry Number 146 UP
IDENTIFYING CHROMOSOME CLUSTERS IN HUMAN FIBROBLAST NUCLEI USING SCHIP

By: Nausheen Mirza
Mathematics & Computer Science
Faculty Advisor: Dr. Javier Arsuaga (Mathematics)

Entry Number 147 UP
THE POLYTOPE OF AFFINE ENDOMORPHISMS OF A REGULAR K-GON

By: Mark Contois
Mathematics
Faculty Advisor: Dr. Joseph Gubeladze

Entry Number 148 UP
NONLINEAR OPTICS IN PHOTONIC LATTICES

By: Alex Samodurov
Physics and Astronomy
Faculty Advisor: Dr. Zhigang Chen

Entry Number 149 UP
CHROMOSPHERIC ACTIVITY IN NEARBY STARS

By: Howard Isaacson
Physics and Astronomy
Faculty Advisor: Dr. Debra Fischer