



★★★
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 ★ **Thank you for your generous** ★
 ★ **financial support toward the** ★
 ★ **2012 Student Project Showcase!** ★
 ★
 ★ **Kenson Ventures** ★
 ★ **Robert W. Maxwell** ★
 ★★★

The College of Science & Engineering

proudly presents its

14th annual

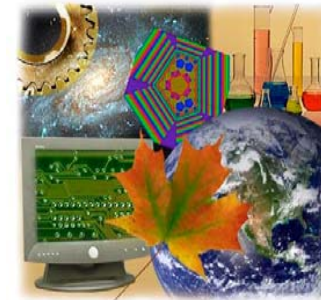
**STUDENT PROJECT
 SHOWCASE
 & ALUMNI RECEPTION**

College of Science & Engineering

Dr. Sheldon Axler, Dean
 Dr. Lisa White, Associate Dean

- Dr. Michael Goldman, Chair, Department of Biology
- Dr. Jane DeWitt, Chair, Department of Chemistry & Biochemistry
- Dr. Dragutin Petkovic, Chair, Department of Computer Science
- Dr. Wenshen Pong, Director, School of Engineering
- Dr. Jerry Davis, Chair, Department of Geography and Human Environmental Studies
- Dr. Oswaldo Garcia, Chair, Department of Geosciences
- Dr. David Bao, Chair, Department of Mathematics
- Dr. Susan Lea, Chair, Department of Physics & Astronomy
- Dr. Julia Lewis, Chair, Department of Psychology
- Dr. Toby Garfield, Director, Romberg Tiburon Center

Lannie T. Nguyen-Tang, Coordinator of Alumni Relations & Student Projects



Friday, May 4, 2012

3:00 – 7:30 pm

San Francisco State University



College of Science & Engineering
 1600 Holloway Avenue, San Francisco, CA 94132-4163
 Phone: (415) 338-1571; E-mail: science@sfsu.edu
www.sfsu.edu/~cse; www.sfsu.edu/~science



A Message from the Dean

At San Francisco State's College of Science & Engineering, students find faculty who encourage breaking traditional barriers. The faculty of the College are committed to creating and maintaining connections with our students, with other scientists and engineers, and with the scientific community of the Bay Area. In so doing, we act as the vital link connecting students to the world of science.

The college is committed to the philosophy that the best education of its students comes through involvement in research and the solution of real-world problems.

To carry out that objective, we must recruit and retain outstanding scientists and engineers to our faculty and be able to offer them and their students the most advanced facilities and equipment possible.

In addition to our active research faculty, we have many state-of-the-art facilities and research centers that offer unique research experiences for students at all levels, from undergraduate to post-doc: the Conservation Genetics Laboratory, the Romberg Tiburon Center for Environmental Studies, a DNA analysis facility, an electron microscope facility, a computational chemistry and visualization laboratory, a molecular biology core facility, and the Nuclear Magnetic Resonance Center.

A Setting That's Ideal



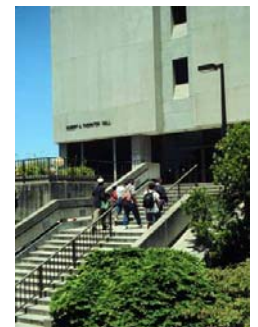
Few places in this country can match the San Francisco Bay Area for the depth and caliber of scientific and technological research.

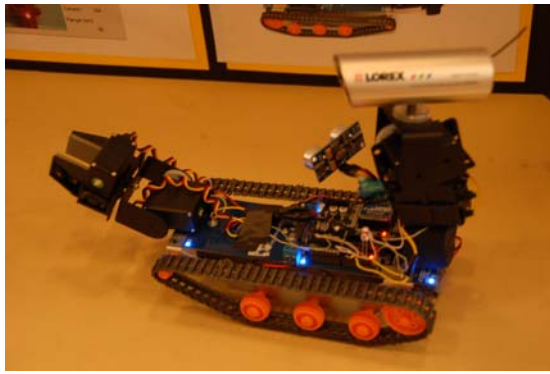
The College of Science & Engineering endeavors to help its students benefit from this distinctive environment. Our students learn through research opportunities, internships, cooperative education, and other training placements.

We offer a strong and diverse faculty, many of whom are experts from industry or the research community, with a growing staff of minority and women professors and mentors, an important component of an urban university.

Many of our students are first-generation Americans. Many are the first in their families to go to college. More than half of our students are members of minority groups, and one quarter are from groups traditionally underrepresented in engineering and the sciences.

Providing the means for people of exceptionally diverse backgrounds to come into their own is a major part of San Francisco State's identity as an urban university. The College of Science & Engineering has been a leader in increasing the number of underrepresented minority students in science- and mathematics-based fields, from elementary to graduate school.





PROGRAM

3:00 pm
Student Project Showcase Begins

6:00 pm
Reception

6:30 pm
Welcome from Dean Sheldon Axler

6:40 pm
Expository Presentation
Forecasting Happiness:
More difficult than the Weather
By Dr. Ryan T. Howell
Department of Psychology

7:00 pm
Announcement of Showcase Winners



PROJECTS #1 – 82 ARE FROM GRADUATE STUDENTS

Entry Number: 1 GB

TERROR MANAGEMENT: UPWARD AND DOWNWARD MENTAL SIMULATIONS OF MORTALITY

By: Patrick Edward Kraus Boyd

Social Psychology

Faculty Advisor: Dr. Charlotte Chuck Tate

Entry Number: 2 GB

SOCIAL INTERACTIONS, AGE AND AGGRESSION: NEGATIVE BEHAVIORS IN PRESCHOOLERS

By: Aggie Wong

Developmental Psychology

Faculty Advisor: Dr. Jeffrey Cookston

Entry Number: 3 GB

PRESCHOOL SOCIAL RATINGS: THE INFLUENCE OF VISIBILITY AND NEGATIVITY

By: Danika Maddocks

Developmental Psychology

Faculty Advisors: Dr. Jeffrey Cookston and Dr. Patricia Miller

Entry Number: 4 GB

THE SOCIAL COGNITIVE PRESCHOOLER: A COMPREHENSIVE STUDY OF CHILDREN

By: Luke Remy

Developmental Psychology

Faculty Advisor: Dr. Jeffrey Cookston

THANK YOU

for volunteering your time as
the JUDGES of the COSE
Student Project Showcase!

Aman Singh

Andrew Oliphant

Andy Zink

Anna G Ureta

Anne Todgham

Anton Guliev

Arek Goetz

BenJoaquin Gouverneur

Blake Riggs

Byron Dom

Caran Colvin

Chris Brooks

Christian Gonzales

Craig Persiko

Dan Buttlair

Danilo Blanusa

David Bao

Dorothy Jones

Ekkehard Blanz

Eric Hsu

George Gassner

Jeff Cookston

Joe Barranco

Jonathan Stillman

Jonathon Tai

Kayvon Shakeri

Ken Skidmore

Kristine Low

Lance Lund

Linda Chen

Micah Robinson

Mithat Unsel

Natalia Caporale

Oliver Burke

Ozkan Celik

Peter Ingmire

Robert Levenson

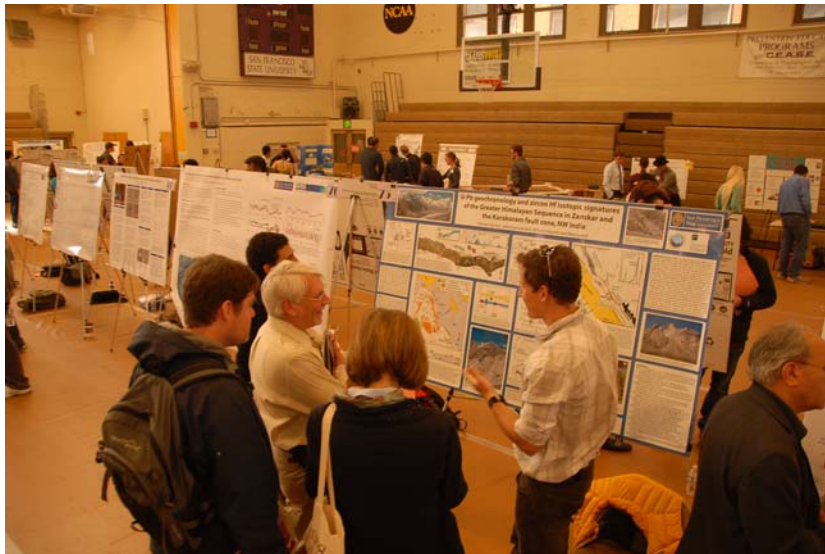
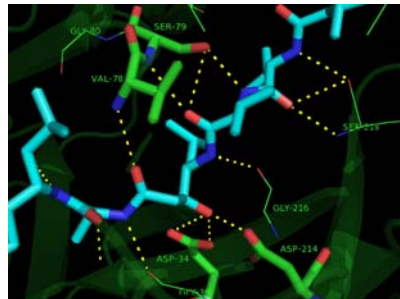
Sacha Bunge

Sally Pasion

Sarah Holley

Scott Roy

Teaster Baird



Entry Number: 5 GB
HOW DID YOU CHOOSE YOUR MAJOR?: A CROSS-CULTURAL STUDY OF INTEREST, EMPLOYMENT OPPORTUNITIES, AND MOTIVATION AMONG COLLEGE STUDENTS

By: Toi Sin Arvidsson
Developmental Psychology
Faculty Advisor: Dr. Jeffrey Cookston

Entry Number: 6 GB
**YOUR BRAIN, YOURSELF!:
PREPARING PRE-ADOLESCENTS TO ADOPT A GROW**
By: Toi Sin Arvidsson, Brea Kelsey, and Vanessa Calavano
Developmental Psychology
Faculty Advisors: Dr. Jeffrey Cookston and Dr. Patricia Miller

Entry Number: 7 GB
CULTURAL DIFFERENCES IN FACTORS ASSOCIATED WITH ACADEMIC ACHIEVEMENT

By: Trang Nguyen, Jason Chung (Young Jin Nahm, Yonsei University, South Korea), Dr. Do-Joon Yi (Yonsei University, South Korea), and Young Shin Montgomery
Developmental Psychology
Faculty Advisors: Dr. Jae Hee Paik, Dr. Jeffrey Cookston, and Dr. Seung Hee Yoo

Entry Number: 8 GB
CONFLICT BEHAVIOR IN ROMANTIC RELATIONSHIPS: THE ROLE OF SELF-COMPASSION AND SELF-ESTEEM

By: Alison Wu
Psychology
Faculty Advisor: Dr. Seung Hee Yoo

Entry Number: 9 GB
PHENOMENOLOGY OF THE STREAM OF CONSCIOUSNESS: INTROSPECTIONS ABOUT THOUGHTS AND THE INTERNAL OBSERVER

By: Christine Godwin and Allison McBride
Psychology
Faculty Advisors: Dr. Ezequiel Morsella and Dr. Mark W. Geisler



Entry Number: 10 GB

**WHEN THE YOUNG WALK IN ELDERLY SHOES:
PERSPECTIVE-TAKING AND SOCIAL DISTANCE**

By: Eric Splan, Tyler Allen, and James McGraw
Psychology
Faculty Advisor: Dr. Avi Ben-Zeev

Entry Number: 11 GB

**WHEN IGNORANCE IS BLISS: KNOWLEDGE OF STEREOTYPE THREAT
HEIGHTENS ENDORSEMENT OF GENDER ESSENTIALISM**

By: Erica Duggan, Liz Scharnetzki, and William Krenzer
Psychology
Faculty Advisor: Dr. Avi Ben-Zeev

Entry Number: 12 GB

**KOREAN AMERICAN INTERGROUP ATTITUDES AND PERCEIVED INTER-
GROUP EMOTIONS**

By: Jason Chung
Psychology
Faculty Advisor: Dr. Seung Hee Yoo

Entry Number: 13 GB

**INTROSPECTIONS ABOUT VISUAL SENSORY MEMORY DURING THE CLAS-
SIC SPERLING ICONIC MEMORY TASK**

By: Lara Krisst
Psychology
Faculty Advisor: Dr. Ezequiel Morsella

Entry Number: 14 GB

**PHONOLOGICAL UNDERSPECIFICATION IN THE MENTAL LEXICON:
EVIDENCE FROM EVENT-RELATED POTENTIALS AND
SPECTRAL PERTURBATION**

By: Noriko Tanigawa
Psychology
Faculty Advisors: Dr. Mark W. Geisler
and Dr. John J. Kim



Entry Number: 151 UE

EARTHQUAKE RESEARCH: BUILDING SEISMICITY

By: Joseph Khoury, Rahul Sharma, Darwin Galang, Andrew Poelvoorde,
and Mina Khanaman
Civil Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 152 UE

CONCRETE CANOE

By: Watt Lei, Jasmine Williams, Jose Ronses, Kara Tremblay, Hao Lac, Bri-
an Villamor, Jordan Wolfe, and Calvin Tam
Civil Engineering
Faculty Advisor: Dr. Tim D'Orazio

Entry Number: 153 UE

CONSTRUCTION MANAGEMENT PROJECT

By: Kevin Kha Luu, Yong Yan, Xue Yuan, Abdul Alnassar, and Zhibao Yan
Civil Engineering
Faculty Advisors: Dr. Tim Dorazio and Dr. Ghassan Tarakji

Entry Number: 154 UE

WATER TREATMENT/FILTRATION

By: Samantha Cho, Adriana Vallejo, Nick Salinas, J.C. Martinez, Gabriel
Wynn-Gould, Jesus Flores, and Yoel Palomino
Civil Engineering
Faculty Advisor: Dr. Elahe Enssani

Entry Number: 155 UE

Steel Bridge Team 2012

By: Thomas Chau, Joyce Edey, Jonathan Li, Luke Roy, and Sonny Sunak
Civil Engineering
Faculty Advisor: Dr. Tim D'Orazio



Entry Number: 145 UE

GRAVITY CHARGER

By: Bret Cooke

Mechanical Engineering

Faculty Advisors: Joachim Pederson and Dr. Kwok-Siong Teh

Entry Number: 146 UE

AUTOMATIC MEDICATION DISPENSER

By: Lucas Cooter and Arjun Tejaswi

Mechanical Engineering

Faculty Advisor: Dr. George Anwar

Entry Number: 147 UE

REVIVING CNC

By: Michael Kinsler and Michael Curry

Mechanical Engineering

Faculty Advisors: Joachim Pederson and Dr. Kwok-Siong Teh

Entry Number: 148 UE

CAM-DRIVEN RATCHET

By: Nick Foster

Mechanical Engineering

Faculty Advisors: Joachim Pederson and Dr. Kwok-Siong Teh

Entry Number: 149 UE

LIFTING SYSTEM WITH A COMBINATION OF PULLEYS AND GEARS

By: Shan Zhang, Jingge Hu, Guanxin Liu, and Ming Li

Mechanical Engineering

Faculty Advisorss: Joachim Pederson and Dr. Kwok-Siong Teh

Entry Number: 150 UE

GEOTECHNICAL HOME DEVELOPMENT

By: Ina Astreika and Adedola Fagorala

Civil Engineering

Faculty Advisor: Dr. Tim D'Orazio

Entry Number: 15 GB

**EVIDENCE FOR CROSS-GENDER EFFECTS ON
ATTENTIONAL AND CATEGORICAL
PROCESSING OF FACES**

By: Robin I. Goodrich, Jason Samaha,

Lars F. Hedin, Darwin Guevarra,

and Sierra P. Niblett

Psychology

Faculty Advisors: Dr. Avi Ben-Zeev and Dr. Mark W. Geisler



Entry Number: 16 GB

**EFFECTS OF EXTERNAL DISTRACTORS ON REHEARSAL FREQUENCY AND
WORKING MEMORY BASED ACTION PRODUCTION**

By: Tiffany Jantz

Psychology

Faculty Advisor: Dr. Ezequiel Morsella

Entry Number: 17 GB

**A NEW UNDERSTANDING OF ANHEDONIA IN SCHIZOPHRENIA:
EVIDENCE FROM DAILY LIFE**

By: Amy H. Sanchez

Psychology

Faculty Advisor: Dr. David E. Gard

Entry Number: 18 GL

**EVALUATION OF EARLY BANKING IN THE CLONEPIX™ FL CELL LINE
DEVELOPMENT PROTOCOL**

By: Constance Chow

Biomedical Sciences

Faculty Advisor: Dr. Lily Chen

Entry Number: 19 GL

**SPHINGOSINE-1-PHOSPHATE LYASE IS REQUIRED FOR MYOGENIC
DIFFERENTIATION AND MYOGENIC MICRORNA
EXPRESSION IN C2C12 CELLS**

By: Dianna Baldwin

Stem Cell Science

Faculty Advisor: Dr. Carmen Domingo

Entry Number: 20 GL

**CHARACTERIZATION OF GERM CELL DEVELOPMENT OF
HUMAN SCHISTOSOME PARASITE**

By: Arrezzo Moghaddasi, Danielle Kellar, and Jennifer Griswold
Cell and Molecular Biology
Faculty Advisor: Dr. Lily Chen

Entry Number: 21 GL

EXAMINING THE ROLE OF ATF3 SPLICE VARIANTS ON INF-BEXPRESSION

By: Ben Brown
Cell and Molecular Biology
Faculty Advisor: Dr. Steven Weinstein

Entry Number: 22 GL

**NOTCH3 CONTROLS TUMOR SPHERE FORMATION
IN A NON-SMALL CELL LUNG CANCER MODEL**

By: Chris Alleyne-Chin
Cell and Molecular Biology
Faculty Advisor: Dr. Alejandro Sweet-Cordero (Stanford University)

Entry Number: 23 GL

**ALTERNATE FORMS OF ATF3 INTERACTION AND
FUNCTION IN MOUSE MACROPHAGES**

By: Glen Walton
Cell and Molecular Biology
Faculty Advisor: Dr. Steven Weinstein

Entry Number: 24 GL

**EFFECT OF INTRODUCING ACTIVATING TRANSCRIPTION FACTOR 3 (ATF3)
INTO ATF3-/- MOUSE MACROPHAGES**

By: Marsha Paes
Cell and Molecular Biology
Faculty Advisor: Dr. Steven Weinstein

Entry Number: 25 GL

**IDENTIFICATION OF A SECOND SITE SUPPRESSOR OF
CDC24 IN SCHIZOSACCHAROMYCES POMBE**

By: Shani M.C. Chapman
Cell and Molecular Biology
Faculty Advisor: Dr. Sally G. Pasion



Entry Number: 139 UE

INNOVATIVE HAND TRICYCLE DERAILLEUR AND TENSIONER

By: Katherine Smith and Daniel Weber
Mechanical Engineering
Faculty Advisor: Dr. George Anwar

Entry Number: 140 UE

BLUETOOTH LOCKING BIKE RACK

By: Charlie Tang, Mario Coronado, Emmanuel Cruz, Eric Beltran, and
Hamad Alsubai
Mechanical Engineering
Faculty Advisors: Dr. George Anwar and Dr. Hao Jiang

Entry Number: 141 UE

SOLAR POWERED AUTOCLAVE (SPA) SYSTEM

By: Curtis Lee and Steven Wiryadinata
Mechanical Engineering
Faculty Advisors: Dr. George Anwar and Dr. Hao Jiang

Entry Number: 142 UE

**DESIGN OF A FOAM-CORE TRI-COPTER WITH
CLOSED LOOP YAW CONTROL**

By: Mark Giannini
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 143 UE

THREE SPEED MANUAL TRANSMISSION WITH REVERSE

By: Vikram Mehta, Atilio Gil, and John Luong
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 144 UE

WIND TURBINE

By: Aleksandr Valeyev, Cody Darwin and Shelley Kim
Mechanical Engineering
Faculty Advisors: Joachim Pederson and Dr. Kwok-Siong Teh

Entry Number: 133 UE
MICROSCOPE STAGE COOLER
By: Serge Dusheyko and Norbie Magno
Mechanical and Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 134 UE
FORCE CHARACTERIZATION OF A BODY-POWERED HYBRID UPPER EXTREMITY PROSTHESIS
By: John Martinez and Melissa Saucedo
Mechanical Engineering
Faculty Advisor: Dr. Ozkan Celik

Entry Number: 135 UE
AN LED MATRIX-BASED ETCH-A-SKETCH AND PONG GAME
By: Melissa Saucedo, Daniel Catalan, and Henry Liu
Mechanical and Electrical Engineering
Faculty Advisor: Dr. Ozkan Celik

Entry Number: 136 UE
1LB OBJECT THROWING TREBUCHET
By: Noah Beltran, Gio Avilez, and Melissa Saucedo
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 137 UE
ROBOTIC QUADROTOR AERIAL SENSOR PLATFORM
By: T. Craig Brinton, George Bainbridge, and Luke Moselle
Mechanical and Electrical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh



Entry Number: 138 UE
IMPORTANCE OF POPULATION DENSITY WITH A MFC
By: Erik Brandt
Mechanical Engineering
Faculty Advisor: Dr. Dipendra Sinha

Entry Number: 26 GL
REVEALING THE REGULATORS OF SPERM-SPECIFIC ENZYMES NEEDED FOR FERTILITY
By: Tyler Curran
Cell and molecular biology
Faculty Advisor: Dr. Diana Chu



Entry Number: 27 GL
REPROGRAMMING WITH OOCYTE FACTORS TO GENERATE INDUCED PLURIPOTENT STEM CELLS
By: Devi Paulvannan
Microbiology
Faculty Advisor: Dr. Lily Chen

Entry Number: 28 GL
DIFFERENTIATION OF EMBRYONIC STEM CELLS INTO CARDIOMYOCYTES
By: Danielle Kellar and Jennifer Griswold
Microbiology
Faculty Advisor: Dr. Lily Chen

Entry Number: 29 GL
EXAMINING FUSION RATES AND GENETIC DIVERSITY OF AN INVASIVE COLONIAL ASCIDIAN IN WHITING HARBOR, ALASKA
By: Darragh Clancy
Conservation Biology
Faculty Advisor: Dr. Sarah Cohen

Entry Number: 30 GL
COMPARATIVE ANALYSIS OF SAMPLING TECHNIQUES FOR OTHV-1 DETECTION IN CALIFORNIA SEA LIONS
By: Martha Maria Velez
Conservation biology
Faculty Advisor: Dr. Frank Cipriano

Entry Number: 31 GL
UNDERSTANDING ENIGMA: THE EFFECTS OF A FUNGAL PATHOGEN ON WILD YOSEMITE TOAD POPULATIONS
By: Celeste Dodge
Ecology and Systematic Biology
Faculty Advisor: Dr. Vance T. Vredenburg

Entry Number: 32 GL
AGING IN THE CENTRAL NERVOUS SYSTEM

By: Lilia Ornelas
Physiology and Behavioral Biology
Faculty Advisor: Dr. Chris Moffatt

Entry Number: 33 GL
METABOLIC COSTS OF OCEAN ACIDIFICATION ON GROWTH AND DEVELOPMENT OF THE NATIVE OLYMPIA OYSTER, OSTREA LURIDA
By: Sara Boles, Annaliese Hettinger, Dr. Brian Gaylord, and Eric Sanford
Physiology and Behavioral Biology
Faculty Advisor: Dr. Anne Todgham

Entry Number: 34 GL
PHYSIOLOGICAL PERFORMANCE OF LOTTIA DIGITALIS: THERMAL SENSITIVITY AND LIMITS TO INTERTIDAL CONDITIONS
By: Brittany E. Bjelde and Dr. Jonathon H. Stillman
Marine Biology
Faculty Advisor: Dr. Anne Todgham

Entry Number: 35 GL
OCEAN ACIDIFICATION IMPACTS ON THE METABOLISM AND ENERGETICS OF INTERTIDAL PORCELAIN CRAB (GENUS: PETROLISTHES) EARLY LIFE HISTORY STAGES
By: Hayley Anne Carter
Marine Biology
Faculty Advisor: Dr. Jonathon Stillman

Entry Number: 36 GL
AN ANALYSIS OF COPEPOD FEEDING USING FLOWCAM
By: Karen Kayfetz
Marine Biology
Faculty Advisor: Dr. Wim Kimmerer

Entry Number: 37 GL
STRAIN-SPECIFIC RESPONSES TO NITROGEN SOURCE IN COCCOLITHOPHORES
By: Rachel E. Dorfman
Marine Biology
Faculty Advisor: Dr. Jonathon Stillman

Entry Number: 127 UE
PitView
By: Joseph Parrish, Marcus Perez, and Johnson Taing
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang



Entry Number: 128 UE
COUPLING ENHANCEMENT OF PLANAR SPIRAL COILS USING PLANAR FERRITE FOR BIOMEDICAL IMPLANTS
By: Marcella Ysidra Ramirez
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 129 UE
GRAPHICAL USER INTERFACE FOR THE PURPOSE OF AIRCRAFT REMOTE CONTROL USING JOYSTICKS
By: Luis Bill, Daniel Catalan, and John Berkeley Martinez
Electrical Engineering and Mechanical Engineering
Faculty Advisor: Dr. George Anwar

Entry Number: 130 UE
BEAR WITH ME
By: Nami Gheidar, Nick Weil, and Michelle Mason
Electrical Engineering and Mechanical Engineering
Faculty Advisor: Dr. George Anwar

Entry Number: 131 UE
RENEWABLE ENERGY: STIRLING ENGINE
By: Martin Ngo, Edmund Hom, and Gabriel Suller
Civil, Electrical, and Mechanical Engineering
Faculty Advisors: Dr. A. Cheng, Dr. V.V. Krishnan, and Dr. Elahe Enssani

Entry Number: 132 UE
TWO-WHEELED SELF BALANCING SKATEBOARD
By: Raffy Tan Jr., Mike Shahindoust, Hamlet Orloski, and Abraham Zepeda
Mechanical and Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 121 UP

**DNA NETWORKS -SPONTANEOUS GROWTH AND DECAY
OF TRYPANOSOMATID KINETOPLAST**

By: Victor Rodriguez, Kenneth Hinson, and Dr. Javier Arsuaga

Physics

Faculty Advisor: Dr. Javier Arsuaga

Entry Number: 122 UE

REMOTE CONTROLLED ROBOT WITH VOICE CONTROL & VIDEO FEED

By: Enrique Maycotte

Computer Science

Faculty Advisor: Dr. William Hsu

Entry Number: 123 UE

USE OF CLOUD COMPUTING AT SFSU CCLS

By: C. Dream Nefra Atterberry

Electrical Engineering and Business Administration

Faculty AdvisorS: Dr. Dragutin Petkovic and Mike Wong

Entry Number: 124 UE

SENIOR CITIZEN EMERGENCY RESPONSE DEVICE

By: Daniel Catalan, Luis Bill, Sam Goldsby, and Sonny Lu

Electrical Engineering

Faculty Advisor: Dr. Hao Jiang

Entry Number: 125 UE

SMART NOTIFICATION SYSTEM

By: Hermes Ruiz-Dominguez, Juan Francisco Hidalgo, and Regina Marie C.

Bangcaya

Electrical Engineering

Faculty Advisor: Dr. Hao Jiang

Entry Number: 126 UE

SMART PHONE DOOR LOCK CONTROL

By: James Huang, Chien-Jung Chu, Han Zhang,

Yves JC Galang, and ZeQing Wang

Electrical Engineering

Faculty Advisor: Dr. Hao Jiang



Entry Number: 38 GL

**SURVIVAL OF POST PARTURIENT ADULT FEMALE HARBOR SEALS
(PHOCA VITULINA) IN SAN FRANCISCO AND TOMALES BAYS, CALIFORNIA:**

PRELIMINARY RESULTS

By: Suzanne Manugian

Marine Science

Faculty Advisor: Dr. James Harvey (Moss Landing Marine Laboratory)

Entry Number: 39 GL

**PROBING FIRST & SECOND SHELL PRIME SIDE INTERACTION IN TRYPSIN-
FOLD SERINE PROTEASE FUNCTION**

By: Anna Batt

Biochemistry

Faculty Advisor: Dr. Teaster Baird Jr.

Entry Number: 40 GL

**TRAPPING INTERMEDIATES: DEVELOPING A METHOD FOR CRYOGENIC
MAGNETIC CIRCULAR DICHROISM**

By: Diego Baptista

Biochemistry

Faculty Advisor: Dr. Raymond Esquerra

Entry Number: 41 GL

**THE EFFECT OF CO-SOLVENTS ON THE OCCUPANCY OF NON-
COORDINATED INTERNAL WATER IN THE DISTAL POCKET OF MYOGLOBIN**

By: Emelia Padilla, Wes Salameh, Apurwa Sharma, and Susie Calhoun

Biochemistry

Faculty Advisor: Dr. Raymond Esquerra

Entry Number: 42 GL

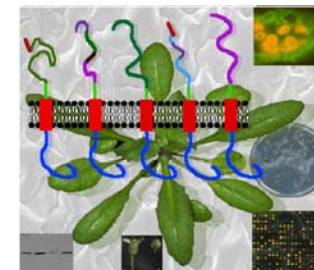
**EXPRESSION PURIFICATION AND
CHARACTERIZATION OF NOVEL STYRENE
MONOOXYGENASE FUSION PROTEINS
FOR BIOCATALYSIS**

By: Kathryn Tucker, Brian Hamilton,

and Dirk Tischler

Biochemistry

Faculty Advisor: Dr. George Gassner



Entry Number: 43 GL

**MARINE ACTINOMYCETES: THE SEARCH FOR
NOVEL SECONDARY METABOLITES WITH SIR2P INHIBITION**

By: Nicole Noel Chaffe

Biochemistry

Faculty Advisor: Dr. Taro Amagata

Entry Number: 44 GL

**BIOCHEMICAL CHARACTERIZATION OF MUTANTS OF
STYRENE MONOOXYGENASE FROM P.PUTIDA S12**

By: Priyanka Chandrasekaran

Biochemistry

Faculty Advisor: Dr. George Gassner

Entry Number: 45 GL

**INVESTIGATION OF RAT ANIONIC TRYPSIN SPECIFICITY AND SELECTIVITY
BY MUTATION OF RESIDUE 41 TO ISOLEUCINE AND VALINE**

By: Zahira Begum

Biochemistry

Faculty Advisor: Dr. Teaster Baird Jr.

Entry Number: 46 GP

**SYNTHESIS AND EVALUATION OF UREARETICS:
A NOVEL CLASS OF UREA-TRANSPORT TARGETING DIURETIC AGENTS**

By: Yan Liu and Jicheng Zhang

Chemistry

Faculty Advisor: Dr. Marc Anderson

Entry Number: 47 GP

REACTION AND ANALYSIS OF AS IN FORT FUNSTON, SAN FRANCISCO, CA

By: Yan Zhao

Chemistry

Faculty Advisor: Dr. Bruce A. Manning

Entry Number: 48 GP

**WHERE THE WHALES ARE: USING HABITAT MODELING
TO INFORM MARINE SPATIAL PLANNING**

By: Andrea Dransfield

Geography

Faculty Advisor: Dr. Ellen Hines

Entry Number: 115 UP

**PHOTOASSISTED HYDROGEN PRODUCTION
WITH (001) ORIENTED ANATASE TiO₂ FILMS**

By: Baeddan Hill

Chemistry

Faculty Advisor: Dr. Andrew Ichimura

Entry Number: 116 UP

AS(V) ADSORPTION BY BAYERITE (B-AL(OH)₃)

By: Hiromi Tsutsui

Earth System Science

Faculty Advisor: Dr. Bruce A. Manning

Entry Number: 117 UP

USING CURVES TO APPROACH THE PACKING OF THE HUMAN GENOME

By: Bradley McAuley

Mathematics

Faculty Advisor: Dr. Javier Arsuaga

Entry Number: 118 UP

**SPATIAL PROXIMITY OF CHROMOSOMES AND
GENE DENSITIES ILLUSTRATE SHELL-LIKE REGIONS WITHIN
THE NUCLEAR CHROMOSOMAL ARCHITECTURE**

By: Reyka Jayasinghe, Heaven Mesfun, and Aileen Young

Mathematics

Faculty Advisor: Dr. Javier Arsuaga

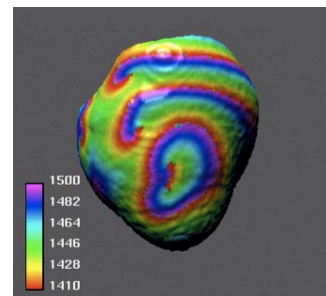
Entry Number: 119 UP

**GUIDING AND MANIPULATING ELECTROMAGNETIC WAVE (LIGHT) IN A
NOVEL DISORDERED PHOTONIC BAND GAP MATERIAL**

By: Brian Leung and YingQuan He

Physics

Faculty Advisor: Dr. Weining Man



Entry Number: 120 UP

OPTICAL TRAPPING AND MANIPULATION

By: Drake Cannan

Physics

Faculty Advisor: Dr. Zhigang Chen



Entry Number: 109 UL
**GENERATING NOVEL ARYL THIAZOLE BASED
INHIBITORS OF TMEM-16A**

By: Kashif Javed
Biochemistry
Faculty Advisor: Dr. Marc Anderson

Entry Number: 110 UL
MECHANISTIC STUDIES OF OROTIDINE DECARBOXYLASE

By: Nicholas Andrew Senger
Biochemistry
Faculty Advisor: Dr. Weiming Wu

Entry Number: 111 UL
**EFFECTS OF THE DISTAL HEME POCKET ENVIRONMENT OF MYOGLOBIN
TO THE BINDING OF NITRITE**

By: Susan Calhoun and Sylvia Wojdyla
Biochemistry
Faculty Advisor: Dr. Raymond Esquerra

Entry Number: 112 UL
**THE EFFECT OF CONFORMATIONAL CHANGES ON NON-COORDINATED
WATER OCCUPANCY ASSOCIATED WITH R AND T ALLOSTERIC STATES OF
CARP HEMOGLOBIN**

By: Wes Salameh and Emelia Padilla
Biochemistry
Faculty Advisor: Dr. Raymond Esquerra

Entry Number: 113 UP
**DEVELOPMENT AND EVALUATION OF A METHOD FOR
ACCURATE QUANTITATION OF PB IN SOIL VIA XRF**

By: Daniel H. Pham and Johnny Zhong
Biochemistry
Faculty Advisor: Dr. Peter T. Palmer

Entry Number: 114 UP
**ELEMENT EFFECT REVISITED: EFFECT OF THE ELECTROPHILICITY OF THE
SUBSTRATE IN NUCLEOPHILIC AROMATIC SUBSTITUTION REACTIONS**

By: Bo Bo
Chemistry and Biochemistry
Faculty Advisor: Dr. Weiming Wu and Dr. James R. Keeffe

Entry Number: 49 GP
**OBJECT-BASED SEGMENTATION OF MULTI-TEMPORAL QUICKBIRD
IMAGERY FOR LANDSLIDE DETECTION**

By: Owen Parker
Geography
Faculty Advisor: Dr. Leonhard Blesius

Entry Number: 50 GP
**RECHARGE BENEATH LOW IMPACT DEVELOPMENT AND
THE EFFECTS OF CLIMATE VARIABILITY**

By: Michelle Newcomer
Geosciences
Faculty Advisor: Dr. Jason Gurdak

Entry Number: 51 GP
**A SEARCH FOR HELIUM WHITE DWARFS AND THEIR ROLE IN
THE GLOBULAR STAR CLUSTER NGC 6752**

By: Carlos Hernandez
Physics
Faculty Advisor: Dr. Adrienne Cool

Entry Number: 52 GP
**A SEARCH FOR MISSING BINARY STARS IN
THE GLOBULAR CLUSTER NGC 6397**

By: Glenna Dunn
Physics
Faculty Advisor: Dr. Adrienne Cool

Entry Number: 53 GP
**OBSERVATION OF SELF-INDUCED TRANSPARENCY IN
NANO-SUSPENSIONS WITH NEGATIVE POLARIZABILITY**

By: Michael Lau
Physics
Faculty Advisor: Dr. Weining Man



Entry Number: 54 GP
**THE FIRST EXPERIMENTAL DEMONSTRATION OF A COMPLETE PHOTONIC
BAND GAP IN 2D HYPER-UNIFORM DISORDERED STRUCTURES**

By: Seyed Reza Hashemizad
Physics
Faculty Advisor: Dr. Weining Man

Entry Number: 55 GP
**SEARCHING FOR THE LOWEST MASS PRODUCTS OF
STAR-FORMATION IN IC 348**

By: Zoe Ames
Physics
Faculty Advisor: Dr. Mary Barsony and Dr. Chris McCarthy

Entry Number: 56 GP
**INVESTIGATING DNA KNOTTING IN BACTERIOPHAGES
USING STOCHASTIC METHODS**

By: Brian Cruz
Mathematics
Faculty Advisor: Dr. Mariel Vazquez

Entry Number: 57 GP
GENERALIZING THE FROBENIUS COIN PROBLEM

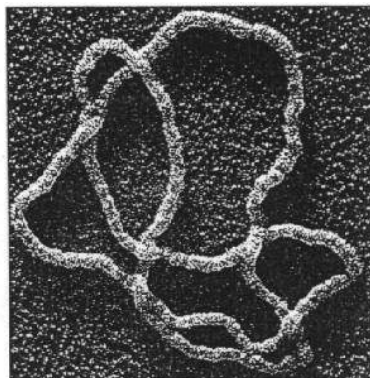
By: Catalina Betancourt
Mathematics
Faculty Advisor: Dr. Matthias Beck

Entry Number: 58 UP
WORMLIKE CHAIN MODEL OF DNA

By: Hong Guo
Mathematics
Faculty Advisor: Dr. Mariel Vazquez

Entry Number: 59 GP
THE SIMPLICIAL LINEAR PICARD GROUP

By: James McErlain
Mathematics
Faculty Advisor: Dr. Joseph Gubeladze



Entry Number: 104 UL
**DETERMINATION OF LEAD IN BALSAMIC VINEGAR
VIA X-RAY FLUORESCENCE SPECTROMETRY:
A SIMPLE AND RAPID METHOD FOR QUANTIFICATION DOWN TO
LOW PPB LEVELS USING SELECTIVE ION EXCHANGE**

By: Bryce Riegel
Biochemistry
Faculty Advisor: Dr. Peter T. Palmer

Entry Number: 105 UL
**DEVELOPMENT AND EVALUATION OF SEVERAL DIFFERENT METHODS TO
DETERMINE ETHANOL VIA HEADSPACE GAS CHROMATOGRAPHY**

By: Chi Kit Keith Lei and Elissa Irma
Biochemistry
Faculty Advisor: Dr. Peter T. Palmer

Entry Number: 106 UL
**DEVELOPMENT OF METHODS FOR DETERMINATION OF LEAD IN CANDY
USING A HANDHELD XRF ANALYZER**

By: Dikshya Joshi
Biochemistry
Faculty Advisor: Dr. Peter T. Palmer

Entry Number: 107 UL
**DEVELOPMENT OF A METHOD FOR RAPID IDENTIFICATION OF VOLATILE
ORGANIC COMPOUNDS IN WINE VIA SPME/GC/MS**

By: Elissa Irma and Keith Lei
Biochemistry
Faculty Advisor: Dr. Peter T. Palmer

Entry Number: 108 UL
**ASSAY TO DETERMINE CONCENTRATIONS OF CAFFEINE,
BENZOIC ACID, ASPARTAME, AND ACESULFAME POTASSIUM IN
SOFT DRINKS USING HPLC**

By: Gino Bautista
Biochemistry
Faculty Advisor: Dr. Les Partridge

Entry Number: 99 UL
**HIS-35, A HISTONE H2A VARIANT THAT DIFFERS FROM CANONICAL H2A
BY ONE AMINO ACID, FUNCTIONS IN FERTILITY**

By: Rodrigo Estrada and Megahnn Shorrock
Physiology and Cell & Molecular Biology
Faculty Advisor: Dr. Diana Chu

Entry Number: 100 UL
THE NEUROENDOCRINE REGULATION OF ECDYSIS-TRIGGERING HORMONE ON ECDYSIS BEHAVIOR OF DECEREBRATED *MANDUCA SEXTA*

By: Vyron Tayag and David Canio
Physiology
Faculty Advisor: Dr. Megumi Fuse

Entry Number: 101 UL
**UNDERGRADUATE DISSECTION TECHNIQUES OF THE HEAD AND NECK:
UNIQUE VIEWS OF INTERNAL STRUCTURE**

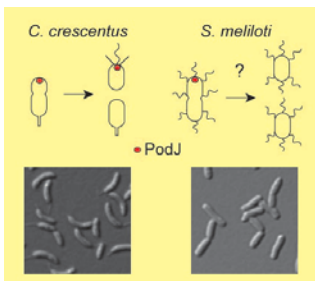
By: Lacy Coniglio and Zoe Saenz
Physiology
Faculty Advisor: Dennis Schulz and Remy Binder

Entry Number: 102 UL
**RESTORATION AND PRESERVATION OF
PATHOLOGICAL SURGICAL SPECIMENS**

By: Mitchell Zekhtser and Mawuli Tugbenyoh
Physiology and Political Science
Faculty Advisor: Gloria Nusse

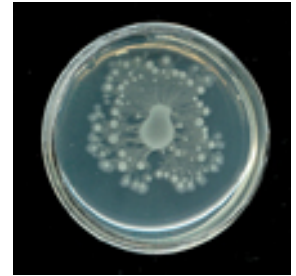
Entry Number: 103 UL
**DEVELOPING A METHOD TO ELUCIDATE THE
CO BINDING MECHANISM TO HEMIN**

By: Bradley Schaller
Biochemistry
Faculty Advisor: Dr. Raymond Esquerra



Entry Number: 60 GP
**THREE DIMENSIONAL ANALYSIS OF
THE TNPI SITE-SPECIFIC RECOMBINATION**

By: Katrina Wono
Mathematics
Faculty Advisor: Dr. Mariel Vazquez



Entry Number: 61 GP
**MICROARRAY DATA IMPUTATION USING
LOCAL SINGULAR VALUE DECOMPOSITION**

By: Lisa Clayton
Mathematics
Faculty Advisor: Dr. Rahul Singh

Entry Number: 62 GP
**USING STATISTICAL METHODS TO EVALUATE LARGE ENROLLMENT
CHANGES IN CALIFORNIA PUBLIC SCHOOLS**

By: Matthew Mccracken Simms
Mathematics
Faculty Advisor: Dr. Mohammad Kafai

Entry Number: 63 GP
EFFECTIVE DUISTERMAAT VAN DER KALLEN

By: Michael James Garcia
Mathematics
Faculty Advisor: Dr. Joseph Gubeladze

Entry Number: 64 GP
**TOPOLOGICAL METHODS FOR EXPLORING GENOMIC IMBALANCE IN
BREAST CANCER**

By: Mousa Rebouh
Mathematics
Faculty Advisor: Dr. Mariel Vazquez

Entry Number: 65 GP
RECONFIGURABLE SYSTEMS AND THE FIBONACCI SNAKE

By: Rika Yatchak
Mathematics
Faculty Advisor: Dr. Federico Ardila

Entry Number: 66 GP

ER DESIGN TOOLS

By: Asha Rani Hongenalli Chandrappa and Vishal Ratansingh Sharma
Computer Science
Faculty Advisor: Dr. Marguerite C. Murphy

Entry Number: 67 GP

ZOMBEE WATCH

By: Asim Utku Zihnioglu
Computer Science
Faculty Advisor: Dr. Dragutin Petkovic and Dr. John Hafernik

Entry Number: 68 GP

**SOFTWARE QUALITY ASSURANCE WITH
CLOUD COMPUTING: CASE STUDY**

By: Jingjing Liu
Computer Science
Faculty Advisors: Dr. Dragutin Petkovic, Mike Wong,
And Dr. Russ Altman (Stanford University)

Entry Number: 69 GP

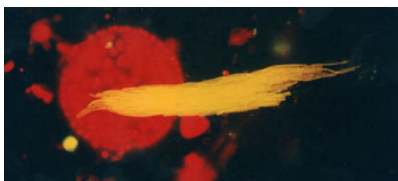
USING SUPPORT VECTOR MACHINE CLASSIFICATION WITH FEATURE

By: Lorenzo Flores, Mike Wong, and Grace Tang
Computer Science
Faculty Advisors: Dr. Dragutin Petkovic, Ljubomir Buturovi,
and Dr. Russ Altman (Stanford University)

Entry Number: 70 GP

**USING MACHINE LEARNING FOR ASSESSMENT AND PREDICTION OF TEAM-
WORK EFFECTIVENESS IN SOFTWARE ENGINEERING EDUCATION**

By: Marc Sosnick, Aishwarya Iyer, and Shenhaochen Zhu
Computer Science
Faculty Advisors: Dr. Dragutin Petkovic and Dr. Kasunori Okada



Entry Number: 71 GP

SFSU OBSERVER PROJECT

By: Nandeesh Rajashekar, Omkar Dangat,
and XuYuan Si
Computer Science
Faculty Advisors: Dr. Christopher D. Smith
and Dr. Marguerite C. Murphy

Entry Number: 94 UL

**NEURAL ECTODERM CELLS REMAIN COMPETENT TO FORM MUSCLE FI-
BERS IN *X. LAEVIS* EMBRYOS**

By: Brigette Jong
Cell and molecular biology
Faculty Advisor: Dr. Carmen Domingo

Entry Number: 95 UL

**MIR-206 IS IMPORTANT FOR PROPER DEVELOPMENT OF THE NOTO-
CHORD-SOMITE BOUNDARY IN *XENOPUS LAEVIS***

By: Ceazar Nave, Hernando Martinez, Daniel Saw, and Dr. Julio Ramirez
Cell and Molecular Biology
Faculty Advisor: Dr. Carmen Domingo

Entry Number: 96 UL

CHARACTERIZING PORCUPINE EFFECTS ON NEURAL TUBE CLOSURE

By: Gina Pay
Cell and Molecular Biology
Faculty Advisor: Dr. Laura Burrus

Entry Number: 97 UL

**ELEVATED NO SIGNALS CORRELATED WITH
ALTERED CELLULAR MORPHOLOGIES IN
ECTODERMAL PERIDERM CELLS SUGGESTIVE OF
LOCALIZED SIGNALING IN CHICKEN EMBRYO DEVELOPMENT**

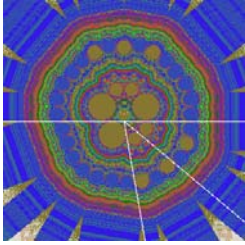
By: Kevin D. Martinez, Lucy Pill, Liat Levy, Dulguun Bayadorj, Victor Wong,
and Rhea Decker
Cell and Molecular Biology
Faculty Advisor: Dr. Wilfred F. Denetclaw



Entry Number: 98 UL

**CATALOGUING BIODIVERSITY THROUGH DNA
BARCODING**

By: Sierra Sky Nishizaki and Travis Siapno
Cell and Molecular Biology
Faculty Advisor: Dr. Christopher D. Smith



Entry Number: 88 UB
**SOCIAL PERCEPTION OF MOTIVATIONS AND
HAPPINESS FOR PURCHASES**
By: Lea M. Lunden and Darwin A. Guevarra
Psychology
Faculty Advisor: Dr. Ryan T. Howell

Entry Number: 89 UB
DECISION-MAKING IN A MONETARY TASK
By: Matthew Moore
Psychology
Faculty Advisor: Dr. Mark W. Geisler and Dr. Ryan Howell

Entry Number: 90 UB
**THE FACE OF GENDER: INDIVIDUATING INFORMATION
ELICITS FASTER REACTION TIMES**
By: Sierra P. Niblett, Robin I. Goodrich, and Tara C. Dennehy
Psychology
Faculty Advisor: Dr. Avi Ben-Zeev and Dr. Mark W. Geisler

Entry Number: 91 UB
**P300 AMPLITUDE AS AN INDEX OF
MEMORY DISTORTIONS FOR SKIN TONE**
By: William Krenzer
Psychology
Faculty Advisor: Dr. Mark W. Geisler

Entry Number: 92 UB
**THE SUBJECTIVE ASPECTS OF PROCESSING INCOMPATIBLE SPEECH
INTENTIONS: EVIDENCE FROM THE STROOP TASK**
By: Zachary I. Greenberg
Psychology
Faculty Advisor: Dr. Ezequiel Morsella and Dr. Ken Paap

Entry Number: 93 UB
THE GREY AREA BETWEEN PURCHASE TYPES: THE IPAD PROBLEM
By: Darwin A. Guevarra and Lea M. Lunden
Psychology
Faculty Advisor: Dr. Ryan T. Howell



Entry Number: 72 GP
**MOLECULAR DYNAMICS SIMULATIONS OF
TRYPSIN ACTIVE SITE VARIANTS**
By: Trevor Gokey and Dr. Anton Guliaev
Computing for Life Sciences
Faculty Advisor: Dr. Anton Guliaev

Entry Number: 73 GP
A LOW-FREQUENCY VERSATILE WIRELESS POWER TRANSFER TECHNOLOGY FOR BIOMEDICAL IMPLANTS
By: Di Lan
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 74 GP
**A PARALLEL-TRACE HIGH-Q PLANAR SPIRAL COIL FOR
BIOMEDICAL IMPLANTS**
By: Shiyu Zhou
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 75 GP
VIRTUAL SCREEN FOR CLOUD THIN CLIENTS
By: Shruti Kanetkar
Embedded Electrical and Computer Systems
Faculty Advisor: Dr. Hamid Shahnasser

Entry Number: 76 GP
PORTING A REAL TIME OPERATING SYSTEM ON A CUSTOM BUILT SYSTEM USING FPGA
By: Sagar Kakade
Embedded Electrical and Computer Systems
Faculty Advisor: Dr. Hamid Shahnasser

Entry Number: 77 GP
NFC Application Interface of Smart Phone and Appliances
By: Jingyu Lin
Engineering
Faculty Advisor: Dr. Hamid Shahnasser

Entry Number: 78 GP

**ELECTRONIC MODELING AND IMPLEMENTATION OF
NEUROLOGICAL SYNAPTIC GAP IN NANO-SCALE CMOS**

By: Sajana Raghavan

Embedded Electrical and Computer Systems

Faculty Advisor: Dr. Hamid Mahmoodi

Entry Number: 79 GP

**HARDWARE MODELING AND IMPLEMENTATION OF A NEURAL NETWORK
FOR ORIENTATION SELECTIVITY OF THE EYE**

By: Michael Chan

Embedded Electrical and Computer Systems

Faculty Advisor: Dr. Hamid Mahmoodi

Entry Number: 80 GP

**SEISMIC PERFORMANCE OF A 3-STORY MOMENT FRAME BUILDING US-
ING RECYCLED POLYSTYRENE CONCRETE**

By: Sarah Kayfetz Outzen

Civil Engineering

Faculty Advisor: Dr. Cheng Chen

Entry Number: 81 GP

**NON-LINEAR SEISMIC RESPONSE OF
REINFORCED CONCRETE STRUCTURES**

By: Julie Leong and Olga Mendez

Structural/Earthquake Engineering

Faculty Advisor: Dr. Cheng Chen

Entry Number: 82 GP

**A COMPARATIVE STUDY OF STEEL COLUMNS UNDER FIRE USING BOTH
ASCE 29-05 FIRE STANDARD AND FINITE ELEMENT ANALYSIS**

By: Samuel Fitzer

Structural/Earthquake Engineering

Faculty Advisor: Dr. Cheng Chen



#83 – 155 ARE FROM UNDERGRADUATE STUDENTS

Entry Number: 83 UB

**DISTRESS, ACCULTURATION, AND BELIEFS ABOUT PSYCHOLOGICAL SER-
VICES AMONG COLLEGE STUDENTS**

By: Louis Cornejo

Developmental Psychology

Faculty Advisor: Dr. Jeffrey Cookston

Entry Number: 84 UB

BUYING UP TO THE JONESES

By: Laura Buckner, Eric Durnell, Andrew Garcia, and Nicholas Harsch

Psychology

Faculty Advisor: Dr. Ryan T. Howell

Entry Number: 85 UB

**THE ROLE OF BROCA'S AREA AND SUPRAMARGINAL GYRUS IN
AUDITORY IMAGERY**

By: Jason Samaha

Psychology

Faculty Advisors: Dr. Ezequiel Morsella and Dr. Mark W. Geisler

Entry Number: 86 UB

EXPERIENTIAL BUYING TENDENCIES AND EMOTIONS

By: Kelly J. Bulta and Lea M. Lunden

Psychology

Faculty Advisor: Dr. Ryan T. Howell

Entry Number: 87 UB

**PARTICIPANT-STIMULUS GENDER CONGRUENCY INFLUENCES
THE CATEGORIZATION OF FACES**

By: Lars F. Hedin and Robin I. Goodrich

Psychology

Faculty Advisors: Dr. Mark W. Geisler and Dr. Avi Ben-Zeev