Thank you for your generous financial support toward the 2012 Student Project Showcase!

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Robert W. Maxwell

The College of Science & Engineering proudly presents its 14th annual STUDENT PROJECT SHOWCASE & ALUMNI RECEPTION

Friday, May 4, 2012
3:00 – 7:30 pm
San Francisco State University
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 Buttlare
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 Arvidssion
Developmental Psychology
Faculty Advisor: Dr. Jeffrey Cookston

Entry Number: 6 GB

**YOUR BRAIN, YOURSELF!: PREPARING PRE-ADOLESCENTS TO ADOPT A GROW**

By: Toi Sin Arvidssion, 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 INTERGROUP EMOTIONS  
By: Jason Chung  
Psychology  
Faculty Advisor: Dr. Seung Hee Yoo

Entry Number: 13 GB  
INTROSPECTIONS ABOUT VISUAL SENSORY MEMORY DURING THE CLASSIC 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, Brian 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 Advisors: 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: Arrezo 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-β EXPRESSION
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 Hettenger, 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 Maycoate
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 Advisor: S. Dragutin Petkovic and Mike Wong

Entry Number: 124 UE
SENIOR CITIZEN EMERGENCY RESPONSE DEVICE
By: Daniel Catalan, Luis Bill, Sam Golbsby, 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 PARTRUITEN 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 TRYSIN 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: 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: Elssa 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 Haernik

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 TEAMWORK 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 FIBERS 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 NOTOCHORD-SOMITE BOUNDARY IN XENOPUS LAEVIS**
By: Ceazar Nave, Hernandez 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
#83 – 155 ARE FROM UNDERGRADUATE STUDENTS

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 USING 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

Entry Number: 83 UB
DISTRESS, ACCULTURATION, AND BELIEFS ABOUT PSYCHOLOGICAL SERVICES 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. Builta 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