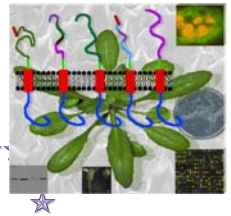
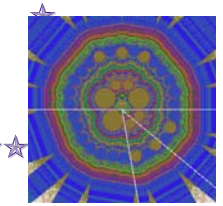


Thank you for your generous financial support toward the 2016 Student Project Showcase!

Kenson Ventures
Robert W. Maxwell



College of Science & Engineering

Dr. Keith Bowman, Dean
Dr. Robert M. Ramirez, Associate Dean

Dr. Michael Goldman, Chair, Department of Biology
Dr. Jane DeWitt, Chair, Department of Chemistry & Biochemistry
Dr. Bill Hsu, Chair, Department of Computer Science
Dr. Dave Dempsey, Chair, Department of Earth & Climate Sciences
Dr. Wenshen Pong, Director, School of Engineering
Dr. Jerry Davis, Chair, Department of Geography & Environment
Dr. David Bao, Chair, Department of Mathematics
Dr. Maarten Golterman, Chair, Department of Physics & Astronomy
Dr. Jeff T. Cookston, Chair, Department of Psychology
Dr. Karina Nielsen, Director, Romberg Tiburon Center

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

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

The College of Science & Engineering

proudly presents its

18th annual

STUDENT PROJECT SHOWCASE & ALUMNI RECEPTION

Friday, May 6, 2016
3:00 pm — 7:30 pm
San Francisco State University

PROGRAM

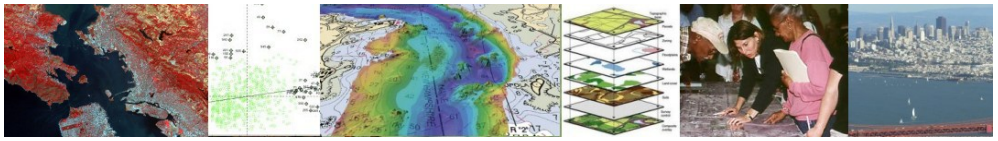
3:00 pm
Student Project Showcase Begins

6:00 pm
Reception

6:30 pm
Welcome from Dr. Keith Bowman
Dean, College of Science & Engineering

6:35 pm
Expository Presentation
Lucky Results
By **Dr. Keith Bowman**

7:00 pm
Announcement of Showcase Winners



THANK YOU

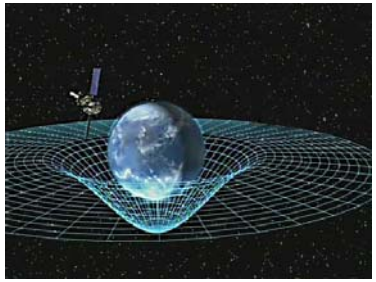
for volunteering your time as the JUDGES of the COSE Student Project Showcase!

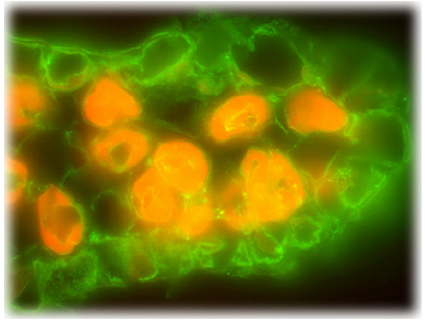
Ali Shehadeh
Amy Smith
Anne Krause
Bruce Manning
Cameron Soulette
Cheng Chen
Chris Moffatt
Felipe Zapata
Gloria Nusse
Hao Jiang
Hezekiel Randolph
Hugh Hui
Jin Ye
John Caskey
Jonathan Song
Jonathan Stillman
Jose de la Torre
Joseph Chen
Joseph Hui
Jun Murakawa
Karen Crow
Kevin Eschleman
Kristan Jensen
Leonhard Blesius
Marc Anderson
Mehran Kafai
Melissa Hagan
Mojtaba Azadi
Nancy Gerber
Rachel Cunningham
Rori Rholfs
Sara Barber
Scott Roy
Susan Mauskopf
Tao He
Teaster Baird
Terry Reyes
Vijay Mariadassou
Wilfred Denetclaw
Xiarong Zhang
Zena Mello
Zhaoshuo Jiang
Zheng-Hui He

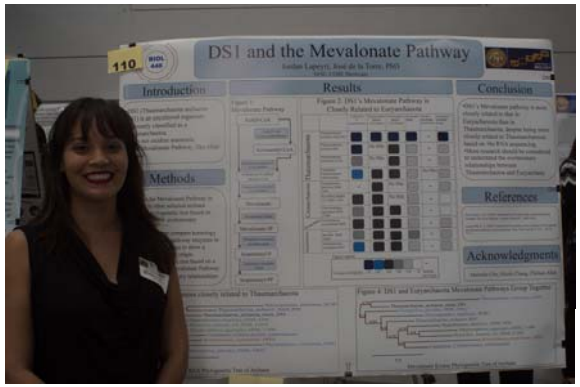
Entry Number: 217 UP2
EARTHQUAKE ENGINEERING RESEARCH INSTITUTE 2016
SEISMIC DESIGN COMPETITION
By: Stephen Schork, Jamie Brownell, Lungyuen Lau, Marisa Araujo,
Kathleen Ocampo, Ryan Schofield, and Omar Plata
Civil Engineering
Faculty Advisors: Dr. Timothy D'Orazio, Dr. Zhaoshuo Jiang, and Dr. Cheng Chen

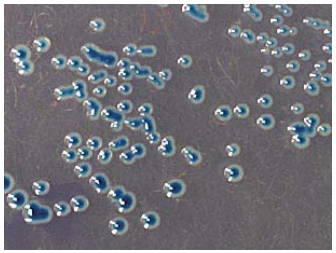
Entry Number: 218 UP2
TIMBUK BRIDGE
By: Tomas Trojacek, Justin Esquivel, Marcus Peppers,
Azalia Madrigal, Emewodish Tadesse, Suyesh Shrestha, Yong Feng,
David Lei, Matthew Carter, and Shawn Graf
Civil Engineering
Faculty Advisor: Dr. Timothy D'Orazio

Entry Number: 219 UP2
SEISMIC STRUCTURAL BUILDING MODEL DESIGN - SP16-FA16
By: William Lee, Farah Alshuaib, Wen Li Tang, Tooraj Yegan, and Wei Jie Liu
Civil Engineering
Faculty Advisor: Dr. Cheng Chen





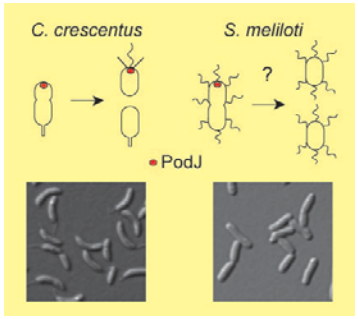


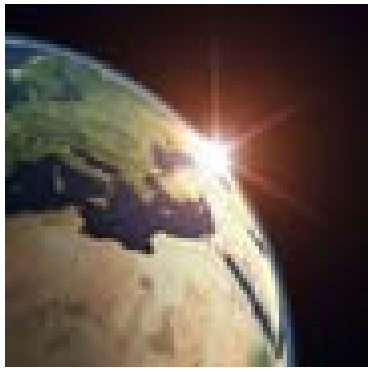


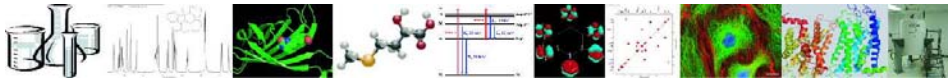
WELCOME

San Francisco State's College of Science and Engineering encourages students to think beyond traditional barriers. We are committed to creating and maintaining connections with our students, professional scientists and engineers, and to the scientific community of the Bay Area. We believe the best education of our students comes through involvement in research and the solution of real-world problems. To carry out that objective, we recruit and retain outstanding scientists and engineers to our faculty, and offer them and their students the most advanced facilities and equipment possible.

Our state-of-the-art facilities and research centers include: the Conservation Genetics Laboratory, the Romberg Tiburon Center for Environmental Studies, an electron microscope facility, computational chemistry and visualization laboratory, a DNA analysis facility, a Thin Film Laboratory, a molecular biology core facility, the Nuclear Magnetic Resonance Center, and a multi-GPU server with Nvidia Tesla and Titan GPUs.







Entry Number: 211 UP2
ANTI-CLUMPING ELECTRIC DRYER
By: Trevor McArthy, Norman Robles, and Faisal Shaji
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

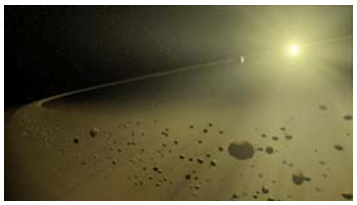
Entry Number: 212 UP2
INTERACTIVE REMOTE SHAKE TABLE LABORATORY FOR INSTRUCTION IN EARTHQUAKE ENGINEERING
By: Alec Maxwell
Civil Engineering
Faculty Advisor: Dr. Zhaoshuo Jiang

Entry Number: 213 UP2
COMPUTING SEISMIC FRAGILITY CURVES
By: Chaoyu Qiu and Yifeng Xu
Civil Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 214 UP2
TIMBER BRIDGE - HATEA BRIDGE
By: Edmund Ng, Casey Alado, Jean Sanchez, Sarah Sojo, Mike Owyang, Andre Espinoza, Usama Tuqan, Johnny Luu, Jason Yu, and Erin Aguiling
Civil Engineering
Faculty Advisor: Dr. Timothy Dorazio

Entry Number: 215 UP2
EFFECT OF INTEGRATION ALGORITHM ON UNCERTAINTY ANALYSIS OF STRUCTURAL RESPONSE UNDER EARTHQUAKE EXCITATION
By: Kawai Law
Civil Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 216 UP2
SFSU STEEL BRIDGE
By: Manuel Uribe, Jesus Gutierrez, Alvaro Arias, Yazeed, Mikdam, Omar, Mohamad, Mohanad, Karim, and Hayder
Civil Engineering
Faculty Advisor: Dr. Timothy Dorazio



Entry Number: 204 UP2
SENIOR DESIGN PROJECT - TAKE COVER
By: Joshua Kessner, Michael Hill,
and Michael Cornish
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 205 UP2
KASPRBOT
By: Lawrence Chiu, Lucas Marsh, and Gerryl Esperacion
Mechanical engineering
Faculty Advisor: Dr. Kwok Siong Teh

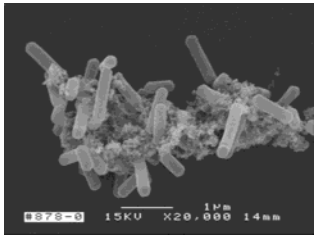
Entry Number: 206 UP2
Adaptive Green: Vertical Indoor Gardening
By: Michael Barriger, Michael Calder, Diana Chang, Victor Lin
Mechanical Engineering
Faculty Advisor: Dr. Kwok Siong Teh

Entry Number: 207 UP2
DENSITY FUNCTIONAL THEORY MOLECULAR DYNAMICS
SIMULATIONS OF LI+ IONS IN BETA-LI3PS4 AND
AMORPHOUS SOLID-ELECTROLYTES
By: Nima Leclerc
Mechanical Engineering
Faculty Advisor: Dr. Nicole Adelstein

Entry Number: 208 UP2
VEHICLE HUD SYSTEM
By: Robert Phung and Alex Mak
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 209 UP2
CLEAN-TOW
By: Spencer Klaiber-Short, Cristina Van Epps, and Jose 'Polo' Chavez
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 210 UP2
SPOT - AN AID FOR THE VISUALLY IMPAIRED
By: Tim Mitchell, Yassine Ouassif, and Sanjeev Gupta
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh



Projects #1 – 95 are from Graduate Students

Entry Number: 1 GB DISPLAY ONLY
ADOLESCENT TIME RELATION AND BULLYING DIFFERS BETWEEN
GENDERS: A FEMALE EFFECT
By: Alyssa Youngquist
Psychology: Developmental Psychology
Faculty Advisor: Dr. Zena R. Mello

Entry Number: 2 GB DISPLAY ONLY
PURCHASING HAPPINESS; IT'S WRITTEN ALL OVER YOUR FACE
By: Kristine Tom
Psychology
Faculty Advisors: Dr. Ryan Howell and Dr. Mark W. Geisler

Entry Number: 3 GB
EMOTIONAL AMBIVALENCE DURING
THE PRODROMAL PHASE OF SCHIZOPHRENIA
By: Alen Tersakyan, Celena Valenzuela, and Josephine Keenan
Psychology
Faculty Advisor: Dr. David Gard

Entry Number: 4 GB
PLEASANT TO AVERSIVE: BRAINWAVE RESPONSES TO EATING
CHOCOLATE PAST SATIATION
By: Alen Tersakyan, Erica Walker, Anar Salayev, and Alejandro Heredia
Psychology
Faculty Advisors: Dr. David Gard and Dr. Mark W. Geisler

Entry Number: 5 GB
PSYCHOPATHOLOGICAL PREDICTORS OF PSYCHOLOGICAL INERTIA
By: Alen Tersakyan, Catherine Kircos, Bree Koenig, and Valerie La
Psychology
Faculty Advisor: Dr. David Gard

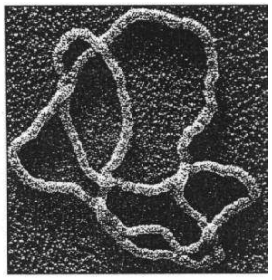
Entry Number: 6 GB
POSTTRAUMATIC STRESS DISORDER: DESENSITIZATION TO NON-TRAUMA RELATED NEGATIVE STIMULI
By: Callan R. Lujan, Rachel Gonzalez, and Jessica Mcmillin
Psychology
Faculty Advisor: Dr. Mark Geisler

Entry Number: 7 GB
IMPLICATIONS OF EMOTION MINDFULNESS ON DEMAND-WITHDRAW COMMUNICATION
By: Ella Tarnate and Alina Belohlavek
Psychology
Faculty Advisor: Dr. Sarah Holley

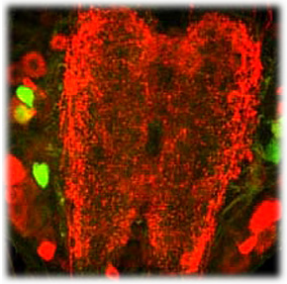
Entry Number: 8 GB
SUPPORTING CHINESE PRESCHOOLERS' SOCIAL AND EMOTIONAL DEVELOPMENT THROUGH A TECHNOLOGY-INTEGRATED PROGRAM
By: Jessica Dow
Psychology
Faculty Advisor: Dr. Jae H. Paik

Entry Number: 9 GB
WHY ARE SOME PEOPLE MORE CREATIVE THAN OTHERS? AN ELECTROPHYSIOLOGICAL APPROACH
By: Kristina Pfeifer, Nancy Garcia, Gavin Dowd, and Reza Gafur
Psychology
Faculty Advisor: Dr. Mark W. Geisler

Entry Number: 10 GB
"WHAT'S IN A NAME?" ON THE TENDENCY TO HOMOGENIZE WOMEN AND INDIVIDUATE MEN
By: Lyndsey Wallace, Chirag Dalibar, Callan Lujan, and Kristina Pfeifer
Psychology
Faculty Advisors: Dr. Avi Ben-Zeev and Dr. Mark W. Geisler



Entry Number: 11 GB
WORKING MEMORY-BASED ACTION CONTROL: AN INTERFERENCE PARADIGM FOR NEUROIMAGING
By: Sabrina Bhangal
Psychology
Faculty Advisors: Dr. Ezequiel Morsella and Dr. Mark W. Geisler



Entry Number: 197 UP1
AUTONOMOUS OBSTACLE AVOIDANCE VEHICLE AND OBJECT FINDER
By: Hector Estrella, Sonam T. Lama, and Justin Quitoriano
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 198 UP1
EZ AQUARIUM
By: Karla V. Vega, Anish Kumaramangalam, and Philip Hu
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 199 UP1 DISPLAY ONLY
DEFECT-INDUCED EXCITONIC PROPERTIES OF THE EDGES AND GRAIN BOUNDARIES IN SYNTHESIZED MONOLAYER MOLYBDENUM DISULFIDE
By: Alexander Yore
Electrical Engineering
Faculty Advisor: Dr. AKM Newaz

Entry Number: 200 UP2
ARM - AUTONOMOUS ROBOTIC MOVEMENTS
By: Andrew Roby and Jonas Ruthfuss
Mechanical Engineering
Faculty Advisor: Dr. Mojtaba Azadi

Entry Number: 201 UP2
E ARM
By: Ethan Tseng, Richard Pham, Tsun Ming Kwan, and Alejandro Ortiz
Mechanical engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 202 UP2
ACCESSIBLE WHEELCHAIR
By: Henry Yu, Xi Zhao, and Ruiming Liu
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 203 UP2
MANUAL CAR HAND CONTROLS
By: Igor Abramson, Calvin Tran, and Ariel Smith
Mechanical Engineering
Faculty Advisor: Dr. Kwok-Siong Teh

Entry Number: 190 UP1
NFC ON LOCK
By: Lance Narbaitz, Consuelo Jimenez, and Mikael Miller
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 191 UP1
HEART SYNC
By: Roseanne Damasco, McKenzie Campagna, and Adrian Solorio
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 192 UP1
A LOW INPUT WIRELESS POWER TRANSFER FOR BIOMEDICAL IMPLANTS
By: Alejandra Franco
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 193 UP1
PROGRAMMABLE RESISTIVE CROSSBAR ARRAY
By: Alex Chen, Sravanth Bolla, and Taylor Chesnut
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 194 UP1
SELF TUNING GUITAR
By: Brett Rinehart and Fidel Quezada Guzmán
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 195 UP1
MOTORCYCLE HELMET HUD
By: Cameron Nauman and Brian Rondolo
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 196 UP1
DUAL AXIS SOLAR TRACKER
By: Carlos Martinez, Abdulrahman Alshaikhi, and Zenas Waa Saephan
Electrical Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 12 GB
COGNITIVE BIASES AND INVOLUNTARY COGNITIONS IN AT-RISK POPULATIONS
By: Wei Dou, Hyein Cho, and Anthony G. Velasquez
Psychology
Faculty Advisors: Dr. Mark W. Geisler and Dr. Ezequiel Morsella

Entry Number: 13 GB
FATHER-CHILD RELATIONSHIP'S IMPACT ON FATHERING GOAL MEETING AND FATHER-CHILD INTERACTION IN ADOLESCENCE
By: Xiaoye Xu
psychology
Faculty Advisor: Dr. Jeff Cookston

Entry Number: 14 GB
APPROACH, AVOID, OR BOUNCE-BACK: THE MEDIATING ROLE OF SELF-TALK
By: Zaviera Bonita Reyes
Psychology
Faculty Advisor: Dr. Seung Hee Yoo

Entry Number: 15 GB
"DEAR MOTHER OF THE TANTRUMING CHILD AT TARGET": MODERATORS OF PARENTAL DISTRESS TOLERANCE
By: Allie Morford
Developmental Psychology
Faculty Advisors: Dr. Jeff Cookston and Dr. Melissa Hagan

Entry Number: 16 GB
MECHANISMS OF MARITAL DISCORD SPILLOVER INTO YOUNG ADULT DATING VIOLENCE
By: Chase J. Boyer
Developmental Psychology
Faculty Advisors: Dr. Jeff Cookston and Dr. Sarah Holley

Entry Number: 17 GB
WHO SHOULD I TALK TO ABOUT HIM? GUIDED COGNITIVE REFRAMING WITH NON-PARENTAL SOURCES ABOUT THE FATHER-CHILD RELATIONSHIP
By: Kenn Dela Cruz
Developmental Psychology
Faculty Advisor: Dr. Jeff Cookston

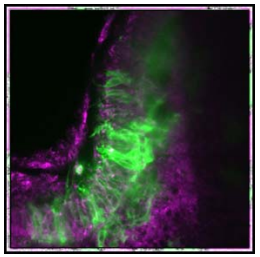
Entry Number: 18 GB
POSITIVE AND NEGATIVE WELL-BEING AMONG ADOLESCENTS FROM THEOLOGICAL AND CONVENTIONAL SCHOOLS IN INDIA
By: Manpreet Kaur
Developmental Psychology
Faculty Advisor: Dr. Zena R. Mello

Entry Number: 19 GB
THE RELATIONS AMONG IMPLICIT THEORIES OF I NTELLIGENCE, SELF-COMPASSION, AND MENTAL HEALTH AMONG CHINESE ADOLESCENTS
By: Riley Chu
Developmental Psychology
Faculty Advisor: Dr. Jae H. Paik

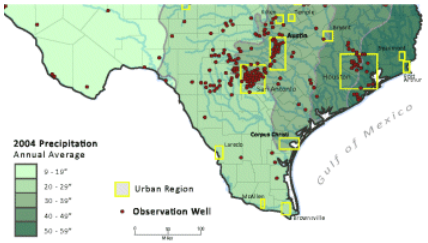
Entry Number: 20 GB
ELECTRONIC PROCEDURES FOR AUTONOMOUS CREWS IN SPACE: AN EXAMINATION OF INDIVIDUAL USE OF AUTOMATED PROCEDURE SUPPORT
By: Jessica Lam, Jessica Dow, David Mast, Laura Wayne, and Megan Winston
Industrial/Organizational Psychology
Faculty Advisor: Dr. Kathleen Mosier

Entry Number: 21 GB
APPRAISING VALUE STRENGTH: AN ANALYSIS OF STUDENT PERCEPTIONS OF SF STATE CORE VALUES
By: Emma Curran, Rebecca Ornellas, Laura Wayne, Michael King, Megan Winston, Darryl Hunter Jr., David W. Mast, Keith Chisholm, and Eric Nestingen
Industrial/Organziational Psychology
Faculty Advisor: Dr. Kevin Eschleman

Entry Number: 22 GB
LONELINESS AND EXPRESSIVE SUPPRESSION: THE ROLE OF PESSIMISM ABOUT EXPRESSIVITY
By: Pooya Razavi
Social Psychology
Faculty Advisor: Dr. Seung Hee Yoo



Entry Number: 23 GL1
L-ARGININE THROUGH NITRIC OXIDE SIGNALING MODULATES SOMITE DERMOMYOTOME GROWTH AND EXPANSION IN EARLY CHICK DEVELOPMENT
By: Fernando R Curiel and Gretchen Hazel Ford
Cell & Molecular Biology
Faculty Advisor: Dr. Wilfred Denetclaw



Entry Number: 183 UP1 DISPLAY ONLY
MYINTERN MOBILE APP
By: Timothy Friesen and Thai Nguyen
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 184 UP1
RESTAURANT WAITLIST MANAGEMENT SYSTEM
By: Agajan Jumakuliyev and Pedrum Aghamir
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 185 UP1
DESIGN OPTIMIZATION OF WRITE CIRCUIT FOR SPIN TRANSFER TORQUE MAGNETIC LATCHES AND LOOK-UP-TABLES IN 32/28NM CMOS PROCESS
By: Andrew Miller and Tyler Sheaves
Computer Engineering
Faculty Advisor: Dr. Hamid Mahmoodi

Entry Number: 186 UP1
ANDROID GAME: TANK ENGINEER
By: Arvin Lau
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 187 UP1
SMART SHOWER SYSTEM AND DRINK DISPENSER
By: Charles Shaw, Rodolfo Alejandro Ayala Palacios, and Rosemarie Martin Dehesa
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 188 UP1
MINIATURE DATA LOGGER FOR WEIGHING LYSIMETER
By: Ian Santos and Kevin Valenzuela
Computer Engineering
Faculty Advisors: Dr. Hao Jiang and Dr. Andrew Oliphant

Entry Number: 189 UP1
DATA SCIENCE CONSOLE
By: Kevin Valenzuela, Yong Wen Wu, and Benjamin Lopez
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 176 UL3
EVALUATING THE ALDEHYDE SUBSTRATE SPECIFICITY OF PHENYLACETALDEHYDE DEHYDROGENASE FROM THE STYRENE CATABOLIC AND DETOXIFICATION PATHWAY
By: Sima Rantisi, Karina Ky, and Andrew Hong
Biochemistry
Faculty Advisor: Dr. George Gassner

Entry Number: 177 UL3
LITHIUM INDIUM CHLORIDE AS SOLID-ELECTROLYTE: COMPUTATIONAL EXPERIMENTS ON DRIVERS OF LI+ DIFFUSION
By: Thomaz Alves
Biochemistry
Faculty Advisor: Dr. Nicole Adelstein

Entry Number: 178 UL3
METAL INHIBITION OF A SPERMIDINE/SPERMINE N1-ACETYLTRANSFERASE (SPEG) IN VIBRIO CHOLERAE
By: Winnie Hong and Joseph Dang
Biochemistry
Faculty Advisor: Dr. Misty L. Kuhn

Entry Number: 179 UP1
CONNECTABLE: MODULAR SYNTHESIZER INTERFACE
By: Michael Castanieto
Computer Science
Faculty Advisor: Dr. Bill Hsu

Entry Number: 180 UP1
FOOD ROULETTE
By: Samuel Gluss, Hari Manivannan, Nikolay Pavlov, and Afshin Binesh
Computer Science
Faculty Advisor: Marc Sosnick

Entry Number: 181 UP1 DISPLAY ONLY
BOMBERMAN
By: Su Khai Koh, Suhan Koh, Steven Nguyen, and Raymond Thai
Computer Science
Faculty Advisor: John Roberts

Entry Number: 182 UP1 DISPLAY ONLY
SLEEP APNEA DETECTION
By: Stephanie Benavidez, Jordan Butler, and Kelvin Lee
Computer Engineering
Faculty Advisor: Dr. Thomas Holton

Entry Number: 24 GL1
MATRIX METALLOPROTEINASE INHIBITION AFTER HEART ATTACK
By: Kimberly Spaulding
Cell & Molecular Biology
Faculty Advisors: Dr. Frank Bayliss and Dr. Mark Ratcliffe

Entry Number: 25 GL1
LIVE CELL TRACKING OF RBM20-INDUCED CARDIOMYOPATHY IN HUMAN IPS-CARDIOMYOCYTES
By: Kristin Holmes
Cell & Molecular Biology
Faculty Advisor: Dr. Carmen Domingo

Entry Number: 26 GL1
PP1 PHOSPHATASES GSP-3 AND GSP-4 AS KEY REGULATORS OF SEX-SPECIFIC CHROMOSOME SEGREGATION IN C. ELEGANS
By: Marco Monroy
Cell & Molecular Biology
Faculty Advisor: Dr. Diana Chu

Entry Number: 27 GL1
EXPLORING THE ROLES OF HISTONE VARIANTS HTZ-1 AND HTAS-1 DURING SPERMATOGENESIS
By: Monet Jimenez
Cell & Molecular Biology
Faculty Advisor: Dr. Diana Chu

Entry Number: 28 GL1
EXAMINING THE INNER AND EXTRINSIC CUES OF ER PARTITIONING PRIOR TO ASYMMETRIC CELL DIVISION
By: Norma Gaytan
Cell & Molecular Biology
Faculty Advisor: Dr. Blake Riggs

Entry Number: 29 GL1
EVOLUTION OF A MODERN RETROGENE
By: Gerid Ollison
Cell & Molecular Biology
Faculty Advisor: Dr. Scott Roy

Entry Number: 30 GL1
STRESS RESPONSES OF TALBOTIA ELEGANS AT EXTREME TEMPERATURES
By: Thuy Tran and Elias M. Duarte
Cell & Molecular Biology
Faculty Advisor: Dr. Zheng-Hui He

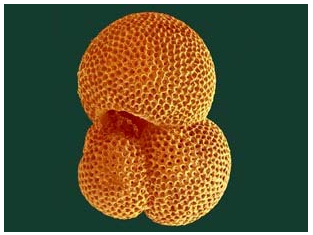
Entry Number: 31 GL1
THE EEG EFFECTS OF COMBINING EMOTIONAL MUSIC AND VERBAL ATTENTION DURING THE COLD PRESSOR TASK
By: Liana Bruggemann, Trevor Jackson, and Jason Soares
Cognitive Neuroscience
Faculty Advisors: Dr. Mark Geisler and Dr. Ezekiel Morsella

Entry Number: 32 GL1
TRACKING THE EVOLUTION OF HIV-1 IN PATIENTS ON PrEP TREATMENT
By: Dwayne Evans
Microbiology
Faculty Advisor: Dr. Pleuni S. Pennings

Entry Number: 33 GL1
ELUCIDATING THE JOINT ROLES OF A PROTEASE AND A LIPOPROTEIN IN SINORHIZOBIUM MELILOTI DURING SYMBIOTIC INFECTION OF PLANT HOST
By: Hector Ramirez
Microbiology
Faculty Advisor: Dr. Joseph Chen

Entry Number: 34 GL1
SURVIVAL OF THE FITTEST: DETERMINE THE RATE AT WHICH MUTATIONS ARE MOVING THROUGH AN HIV POPULATION
By: Kadie-Ann Williams
Microbiology
Faculty Advisor: Dr. Pleuni S. Pennings

Entry Number: 35 GL1
IMMUNE RESPONSES DURING TISSUE REGENERATION OF IMAGINAL DISCS IN *MANDUCA SEXTA*
By: Rachel Bhaskar
Microbiology
Faculty Advisors: Dr. Megumi Fuse, Dr. Steven Weinstein, and Dr. Lily Chen



Entry Number: 36 GL1
INVESTIGATING UNIQUELY CONSERVED GENES ACROSS ARCHAEAL AMMONIA OXIDIZERS AS CANDIDATES FOR GENETIC DETERMINANTS OF THE AMMONIA OXIDATION PATHWAY
By: Roxanne Bantay
Microbiology
Faculty Advisor: Dr. José R. de la Torre

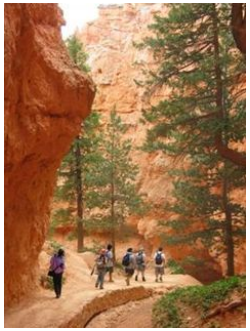
Entry Number: 171 UL3
INVESTIGATION OF CYTOTOXIC SECONDARY METABOLITES PRODUCED BY MARINE SEDIMENT-DERIVED STREPTOMYCES SP. CP47-79
By: Eric Yip
Biochemistry
Faculty Advisor: Dr. Taro Amagata

Entry Number: 172 UL3
PROMOTING CELLULAR DIFFERENTIATION
By: Jasmine Sims
Biochemistry
Faculty Advisor: Dr. Teaster Baird Jr.

Entry Number: 173 UL3
TO OPTIMIZE OR NOT TO OPTIMIZE-THAT IS THE QUESTION: MODIFYING PURIFICATION METHODS FOR GCN5-RELATED N-ACETYLTRANSFERASE ENZYMES
By: Kristen Jew, Alina Revilla, and Melissa Law
Biochemistry
Faculty Advisor: Dr. Misty L. Kuhn

Entry Number: 174 UL3
REPURPOSING THE STYRENE CATABOLIC PATHWAY FOR THE SYNTHESIS OF THIOESTERS: COUPLING THE ACTIVITIES OF NSMOB AND NPADH IN THE TRANSFORMATION OF ALDEHYDES TO ORGANIC ACIDS OR THIOESTERS
By: Nancy Her, Samantha Donaldson, Tania Martinez, Kitty Michel, and Coby Varela
Biochemistry
Faculty Advisor: Dr. George Gassner

Entry Number: 175 UL3
MODIFYING TRYPSIN AS A MODEL FOR SERINE PROTEASE INHIBITOR RESISTANCE
By: Parris Diaz
Biochemistry
Faculty Advisor: Dr. Teaster Baird Jr.



Entry Number: 165 UL3
EXPLORING HOW H3 AND H3.3 VARIANTS AFFECT THE STABILITY OF THE HISTONE TETRAMER
By: Amaryllis Aguilar, Dagim Legesse, Austin Murchison, and Troy Lowe
Biochemistry
Faculty Advisor: Dr. Raymond Esquerra

Entry Number: 166 UL3
ENGINEERING TRYPSIN TO WEAKEN INHIBITOR INTERACTION
By: Anthony Nzessi
Biochemistry
Faculty Advisor: Dr. Teaster Baird Jr.

Entry Number: 167 UL3
ROLE OF RNAI SUPPRESSOR IN VIRAL PATHOGENESIS
By: Brianna Rivera
Biochemistry
Faculty Advisors: Dr. Teaster Baird Jr. and Dr. Arabinda Nayak

Entry Number: 168 UL3
REPURPOSING THE STYRENE CATABOLIC PATHWAY FOR THE SYNTHESIS OF THIOESTERS: DEVELOPING A KINETIC ASSAY FOR STYRENE MONOOXYGENASE REDUCTASE BASED ON THE DISCONTINUOUS MONITORING OF HYDROGEN PEROXIDE
By: Coby Varela, Tania Martinez, Kitty Michel, Nancy Her, and Samantha Donaldson
Biochemistry
Faculty Advisor: Dr. George Gassner

Entry Number: 169 UL3
CHARACTERIZATION OF THE TRANSTHIOESTERIFICATION REACTION OF NPADH FOR THE SYNTHESIS OF NATURAL PRODUCTS USING MONO AND DITHIOL SUBSTRATES
By: Donovan Ruiz, Lucia Hau, and Cyrstal Perez
Biochemistry
Faculty Advisor: Dr. George Gassner

Entry Number: 170 UL3
MECHANISTIC INVESTIGATION OF SPEG SPERMIDINE/SPERMINE N-ACETYLTRANSFERASES FROM ESCHERICHIA COLI AND VIBRIO CHOLERAE
By: Ellison Jung and David Tran
Biochemistry
Faculty Advisor: Dr. Misty L. Kuhn

Entry Number: 37 GL1
IDENTIFICATION OF THE GUT MICROBIOME OF *MANDUCA SEXTA* AND NATIVE INVASION PATHOGENESIS
By: Ryan Marder
Microbiology
Faculty Advisors: Dr. Lily Chen and Dr. Megumi Fuse

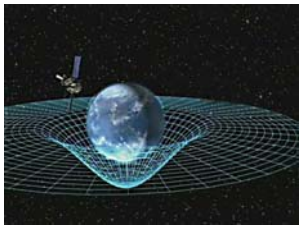
Entry Number: 38 GL2 DISPLAY ONLY
CHARACTERIZING ADAP/VE GENE/C VARIA/ON IN THE SALT MARSH HARVEST MOUSE, REITHRODONTOMYS RAVIVENTRIS
By: Anastasia Ennis
Ecology, Evolution & Conservation Biology
Faculty Advisor: Dr. C. Sarah Cohen

Entry Number: 39 GL2
HIGH THROUGHPUT SEQUENCING PROVIDES NOVEL INSIGHT INTO THE CALIFORNIA DELTA FOOD WEB
By: Ann Holmes
Ecology, Evolution & Conservation Biology
Faculty Advisor: Dr. Wim Kimmerer

Entry Number: 40 GL2
CLOSE TO DEATH: TRANSCRIPTOME COMPARISON BETWEEN PLASMODIUM GALLINACEUM AND HAEMOPROTEUS COLUMBAE
By: Jasper Toscani Field
Ecology, Evolution & Conservation Biology
Faculty Advisor: Dr. Ravinder Sehgal

Entry Number: 41 GL2
UNDERSTANDING MICROALGAL SPECIES COMPOSITION AND CONTRIBUTIONS IN ANTARCTIC GLACIAL MELT WATER THROUGH RBCL HIGH THROUGHPUT SEQUENCING
By: Kathryn Barretto and Andrew Kalmbach
Ecology, Evolution & Conservation Biology
Faculty Advisors: Dr. Edward Carpenter, Dr. José R. de la Torre, and Dr. Luisa Falcon

Entry Number: 42 GL2
INVESTIGATING UNDERGRADUATE STUDENTS' USE OF INTUITIVE REASONING AND EVOLUTION KNOWLEDGE IN EXPLANATIONS OF ANTIBIOTIC RESISTANCE
By: Melissa Richard
Ecology, Evolution & Conservation Biology
Faculty Advisor: Dr. Kimberly Tanner



Entry Number: 43 GL2
OCEAN ACIDIFICATION EFFECTS ON
PHOTOSYNTHETIC SYMBIONTS IN THE SEA ANEMONE
ANTHOPLEURA XANTHOGRAMMICA
By: Alison Fisher
Marine Biology
Faculty Advisor: Dr. Edward Carpenter

Entry Number: 44 GL2
DISSOLVED AND PARTICULATE PRIMARY PRODUCTION
BY COMMUNITIES IN THE AMAZON RIVER PLUME
By: Andrew Kalmbach
Marine Biology
Faculty Advisors: Dr. Edward J. Carpenter, Dr. Ina Benner,
and Dr. William P. Cochlan

Entry Number: 45 GL2
IMMUNOGENETIC VARIATION IN X-CELL DISEASED FISH ACROSS
AN ESTUARINE GRADIENT OF CONTAMINANTS
By: Calvin Lee
Marine Biology
Faculty Advisor: Dr. C. Sarah Cohen

Entry Number: 46 GL2
THERMAL PREFERENCE AND AVOIDANCE
BEHAVIORS IN THE PORCELAIN CRAB,
PETROLISTHES CINCTIPES
By: Emily Lam
Marine Biology
Faculty Advisor: Dr. Jonathon Stillman

Entry Number: 47 GL2
BIOFILM AS A MECHANISM FOR METAL SORPTION ON
PLASTIC DEBRIS
By: Heather Richard
Marine Biology
Faculty Advisor: Dr. Edward Carpenter

Entry Number: 48 GL2
CHANGES IN DEMOGRAPHY ALONG A THERMAL GRADIENT
IN THE INTERTIDAL CRAB PETROLISTHES CINCTIPES
By: Metadel Abegaz
Marine Biology
Faculty Advisors: Dr. Alex R. Gunderson and
Dr. Jonathon Stillman

Entry Number: 159 UL2
INTERACTIVE EFFECTS OF TEMPERATURE AND SALINITY ON
SKELETONEMA MARINOI AND SAN FRANCISCO BAY
PHYTOPLANKTON COMMUNITY ASSEMBLAGES
By: Nina Ciara B. Reyes, Kate Barretto, Morgan Meyers,
and Andrew Kalmbach
Physiology
Faculty Advisor: Dr. Edward Carpenter

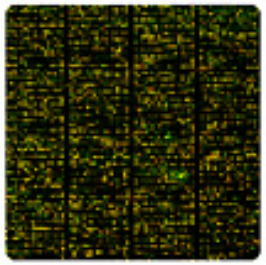
Entry Number: 160 UL2
THE EFFECTS OF DEMENTIA ON THE HUMAN BRAIN
By: Samuel Boikaner
Physiology
Faculty Advisor: Gloria Nusse

Entry Number: 161 UL2
EXPLORATION OF NAPYADIOMYCIN DERIVATIVES
PRODUCED BY THE MARINE
SEDIMENT-DERIVED STREPTOMYCES SP. CP55-76
By: Scott Campit
Physiology
Faculty Advisor: Dr. Taro Amagata

Entry Number: 162 UL2 DISPLAY ONLY
RELATIONSHIP BETWEEN KIDNEY TRANSPLANT AND
BONE DENSITY
By: Veronica Gernhardt and Ashley Del Dosso
Physiology
Faculty Advisor: Gloria Nusse

Entry Number: 163 UL2 DISPLAY ONLY
SPATIAL LEARNING IN ANATOMY
By: Lena Alazzeh
Kinesiology
Faculty Advisor: Gloria Nusse

Entry Number: 164 UL3
TMEM16A INHIBITORS: SYNTHESIS OF SMALL
NOVEL COMPOUNDS
By: Alannah Moises
Biochemistry
Faculty Advisor: Dr. Marc Anderson



Entry Number: 153 UL2
EFFECT OF DIFFERENT ALGAL DIETS ON REPRODUCTION RATE OF *BRACHIONUS PLICATILIS*
By: Christina Lardie and Lauren Lopes
Physiology
Faculty Advisor: Dr. Robyn Crook

Entry Number: 154 UL2
EFFECT OF VARYING ALGAE DIETS ON TISBE BIMINIENSIS & TIGRIOPUS CALIFORNICUS REPRODUCTION
By: Joshua Hernandez and Sara Tom
Physiology
Faculty Advisor: Dr. Robyn Crook

Entry Number: 155 UL2
EXAMINING DIFFERENCES IN NON-CONTENT INSTRUCTOR TALK ACROSS VARYING INSTRUCTOR DEMOGRAPHICS
By: Kristen Liang, Katie Lam, and Alycia Escobedo
Physiology
Faculty Advisors: Dr. Kimberly Tanner and Dr. Colin Harrison

Entry Number: 156 UL2
REPRODUCTION RATE OF ROTIFERS UNDER DIFFERENT LIGHT CONDITIONS
By: Kristen Liang, Lemo Dayekh, Stephanie Yin, Stephanie Skidmore, and Paul Perez
Physiology
Faculty Advisor: Dr. Robyn Crook

Entry Number: 157 UL2
LYMPHEDEMA
By: Mayrane Gonzalez
Physiology
Faculty Advisor: Gloria Nusse

Entry Number: 158 UL2
HOW I MADE SLIDES THE OLD SCHOOL WAY
By: Minerva Orellana
Physiology
Faculty Advisor: Gloria Nusse

Entry Number: 49 GL2
MODELING THE DISTRIBUTION OF PETROLISTHES CINCTIPES IN NORTHERN CALIFORNIA
By: Alma Y. Ceja
Marine Science
Faculty Advisor: Dr. Jonathon Stillman

Entry Number: 50 GL2 DISPLAY ONLY
EXPLORATORY EXERCISE IN GIS: ZOOPLANKTON HABITAT SUITABILITY MAPS IN THE GULF OF THE FARALLONES REGION
By: Ryan Hartnett
Marine Science
Faculty Advisor: Dr. Karina Nielsen

Entry Number: 51 GL2
HOW DOES *MANDUCA SEXTA*, (TOBACCO HORNWORM) COMMUNICATE LOCAL CELL DAMAGE IN THE IMAGINAL DISCS AND CAUSE SYSTEMIC RESYNCHRONIZATION OF ORGAN DEVELOPMENT?
By: Shams Janna Bashar
Physiology
Faculty Advisors: Dr. Megumi Fuse, Dr. Kimberley Tanner, and Dr. Laura W. Burrus

Entry Number: 52 GL2
INVESTIGATING INSTRUCTOR TALK IN COMMUNITY COLLEGE BIOLOGY CLASSROOMS
By: Tiffy Nguyen
Physiology
Faculty Advisors: Dr. Kimberly Tanner, Dr. Laura Burrus, and Dr. Shannon Seidel

Entry Number: 53 GL2
NOCTURNAL BEHAVIOR IN HONEY BEES PARASITIZED BY THE PHORID FLY APOCEPHALUS BOREALIS
By: Erika Bueno
Zoology
Faculty Advisor: Dr. Christopher Moffatt

Entry Number: 54 GL2
COMPUTATIONAL CHARACTERIZATION OF HUMAN ALKYLADENINE GLYCOSYLASE: IMPLICATION FOR PROTEIN-DNA COMPLEX ASSEMBLY
By: Gabrielle Marie Garcia
Biochemistry
Faculty Advisor: Dr. Anton Guliaev

Entry Number: 55 GL2
STRUCTURAL FRAMEWORK OF PYRIDOXAL 5'-PHOSPHATE BINDING TO HUMAN GLUTAMATE-OXALOACETATE TRANSAMINASE (hGOT1)
By: Jesi Lee
Biochemistry
Faculty Advisors: Dr. Anton Guliaev and Dr. Zheng-Hui He

Entry Number: 56 GL2
CONFORMATIONAL ANALYSIS OF THE FRUCTOSE-SPECIFIC TRANSPORTER GLUT5 VIA STEERED MOLECULAR DYNAMICS
By: Trevor Gokey
Biochemistry
Faculty Advisor: Dr. Anton Guliaev

Entry Number: 57 GP1 DISPLAY ONLY
A MULTIFACETED DATA MINING APPROACH TO ANALYZING COLLEGE STUDENTS' PERSISTENCE AND GRADUATION
By: Aparna Gopalakrishnan
Computer Science
Faculty Advisor: Dr. Hui Yang

Entry Number: 58 GP1
SMART IRRIGATION SYSTEM
By: Ammar Naqvi, Abhilash Shrivastava, Swati Patel, Rujoota Shah, and Pooja Kanchan
Computer Science
Faculty Advisor: Dr. William Hsu

Entry Number: 59 GP1
TUNETUTOR: AN AUDIO PLAYER FOR LEARNING MUSIC BY EAR
By: Ben Saylor
Computer Science
Faculty Advisor: Dr. Bill Hsu

Entry Number: 60 GP1
SOLAR SIMULATOR AT SCALE
By: Jason Burmark, Omar Shaikh, and Moses Lee
Computer Science
Faculty Advisors: Dr. Arno Puder and Dr. William Hsu

Entry Number: 147 UL2
EXPLORING BACTERIAL DIVERSITY ON BAY AREA RAPID TRANSIT (BART) DUE TO A MAJOR PUBLIC EVENT
By: Jennifer MacFarlane, Allen Caden, Jacky Lo, and Kimberly Tsui
Microbiology
Faculty Advisors: Dr. Lily Chen, Darleen Franklin, and Dr. Brinda Govindan

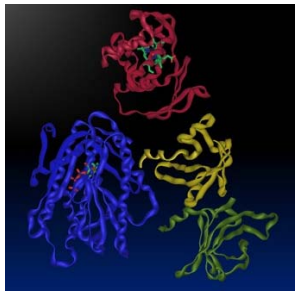
Entry Number: 148 UL2
DOES SCHIZOSACCHAROMYCES OCTOSPORUS CDC24+ RESCUE SCHIZOSACCHAROMYCES POMBE CDC24 MUTANT?
By: Justine Ramos
Microbiology
Faculty Advisor: Dr. Sally Pasion

Entry Number: 149 UL2
A CHALLENGE TO ACCESS THE SECONDARY METABOLITES OF AN UNTAPPED MICROBIAL RESOURCE
By: Nichole Legaspi
Microbiology
Faculty Advisor: Dr. Taro Amagata

Entry Number: 150 UL2
CHARACTERIZING THE BIODIVERSITY OF BOTRYLLID AND DIDEMNID ASCIDIANS IN THE PHILIPPINES THROUGH CO1 BARCODING
By: Ryan Fergusson and Darragh Clancy
Ecology, Evolution & Conservation Biology
Faculty Advisor: Dr. C. Sarah Cohen

Entry Number: 151 UL2
POST-FUSION CHIMERISM IN THE COLONIAL TUNICATE DIDEMNUM VEXILLUM
By: Rachel Weinberg
Marine Biology & Limnology
Faculty Advisor: Dr. C. Sarah Cohen

Entry Number: 152 UL2
ASSESSING THE ANTINOCICEPTIVE EFFECT OF NEUROPEPTIDE, LEUCOPYROKININ (LPK) ON THE DEFENSIVE STRIKE OF THE HORNWORM, *MANDUCA SEXTA*
By: Alicia Rice
Physiology
Faculty Advisor: Dr. Megumi Fuse



Entry Number: 141 UL2
EXAMINING THE BIOPHYSICAL STRUCTURE OF H2A-H2B DIMER AND VARIANTS
By: Austin Murchison and Troy Lowe
Cell & Molecular Biology
Faculty Advisor: Dr. Raymond Esquerra

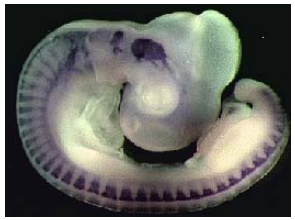
Entry Number: 142 UL2
CHARACTERIZATION OF VIBRIO CHOLERAE SpeG SPERMIDINE/ SPERMINE N-ACETYLTRANSFERASE MUTANTS AND THEIR IMPORTANCE FOR ENZYMATIC ACTIVITY
By: Danielle Asaro and Elison Jung
Cell & Molecular Biology
Faculty Advisor: Dr. Misty L. Kuhn

Entry Number: 143 UL2
MYOGENESIS IN SOMITES IN TISSUE CULTURE INITIATED THROUGH NO SIGNALING IN EARLY STAGES OF DEVELOPING CHICKEN EMBRYOS
By: Jipsa Panchal, Monica Reynoso-Prieto, and Gretchen Hazel Ford
Cell & Molecular Biology
Faculty Advisor: Dr. Wilfred Denetclaw

Entry Number: 144 UL2
LYMPHATIC DRAINAGE OF THE BRAIN
By: Maiya Akhmetzhanova and Gerardo Amador
Cell & Molecular Biology
Faculty Advisors: Gloria Nusse and Charles Barbieri

Entry Number: 145 UL2
CHARACTERIZATION OF JAGUNAL KNOCKDOWN IN THE DROSOPHILA COMPOUND EYE
By: Ulises Diaz
Cell & Molecular Biology
Faculty Advisor: Dr. Blake Riggs

Entry Number: 146 UL2
ACETYLATING POLYMYXIN ANTIBIOTICS: CLUES TOWARD SUBSTRATE SPECIFICITY OF PA3944 GCN5-RELATED N-ACETYLTRANSFERASE OF UNKNOWN FUNCTION
By: Brian Zhang and Layton Joe
Microbiology
Faculty Advisor: Dr. Misty L. Kuhn



Entry Number: 61 GP1
WORLD OF BALANCE
By: Jens Vanderhaeghe
Computer Science
Faculty Advisor: Dr. Ilmi Yoon

Entry Number: 62 GP1
TRACKING BEES USING IMAGING ANALYSIS TECHNIQUES
By: Kay Choi
Computer Science
Faculty Advisor: Dr. William Hsu

Entry Number: 63 GP1
AUTOMATIC QUESTION ANSWERING SYSTEM FOR FACTOID AND NON-FACTOID OPEN-DOMAIN QUESTIONS
By: Mariia Khvalchik
Computer Science
Faculty Advisor: Dr. Anagha Kulkarni

Entry Number: 64 GP1
VIRTUAL MARINE ECOSYSTEM
By: Robert Moon
Computer Science
Faculty Advisor: Dr. Ilmi Yoon

Entry Number: 65 GP1
COMPUTATIONAL PREDICTION OF ATC CODES OF DRUG-LIKE COMPOUNDS USING TIERED LEARNING
By: Thomas Olson
Computer Science
Faculty Advisor: Dr. Rahul Singh

Entry Number: 66 GP1
ALGORITHMIC MAPPING AND CHARACTERIZATION OF THE DRUG-INDUCED PHENOTYPIC-RESPONSE SPACE OF PARASITES CAUSING SCHISTOSOMIASIS
By: Rachel Beasley
Computer Science
Faculty Advisor: Dr. Rahul Singh

Entry Number: 67 GP1
TOWARDS ANTI-STUTTERING: UNDERSTAND RELATION BETWEEN STRESS AND STUTTERING
By: Sarah Shamsi
Computer Engineering
Faculty Advisor: Dr. Xiaorong Zhang

Entry Number: 68 GP1
CITIZEN SENSOR NETWORK - CLIENT SIDE APPLICATION
By: Asaf Weinberg
Electrical Engineering
Faculty Advisor: Dr. Xiaorong Zhang

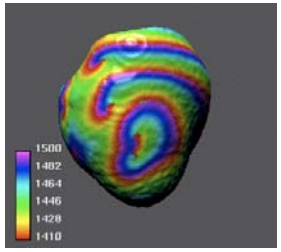
Entry Number: 69 GP1
PULSE WIDTH MODULATION GENERATOR USING FPGA
By: Saurabh Marulkar
Electrical Engineering
Faculty Advisor: Dr. Hao Jiang

Entry Number: 70 GP1
A WIDE DYNAMIC RANGE CURRENT AMPLIFIER FOR NEUROMORPHIC COMPUTING SYSTEM
By: Chi Zhang
Embedded Electrical & Computer Systems
Faculty Advisor: Dr. Hao Jiang

Entry Number: 71 GP1
A FLEXIBLE PLATFORM FOR DEVELOPING REAL-TIME HUMAN MACHINE INTERFACE FOR MYOELECTRIC CONTROLLED PROSTHETIC ARMS
By: Ian Donovan, Kevin Valenzuela, Alejandro Ortiz, Sergey Dusheyko, and Kartik Bholla
Embedded Electrical & Computer Systems
Faculty Advisors: Dr. Xiaorong Zhang and Dr. Kazunori Okada

Entry Number: 72 GP1
EFFICIENT ANALOG-TO-DIGITAL CONVERTER FOR SYNAPSE-BASED NEUROMORPHIC SYSTEM
By: Kang Jun Bai
Embedded Electrical & Computer Systems
Faculty Advisor: Dr. Hao Jiang

Entry Number: 73 GP1
POWER/AREA EFFICIENT INTEGRATE-AND-FIRE CIRCUIT FOR NEUROMORPHIC COMPUTING SYSTEM
By: Weijie Zhu
Embedded Electrical & Computer Systems
Faculty Advisor: Dr. Hao Jiang



Entry Number: 134 UL1 DISPLAY ONLY
A SECRET OF ACID LOVING ARCHAEA
By: Mari Grange
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 135 UL1 DISPLAY ONLY
PUTATIVE GENES OF THAUMARCHAEOTA ARCHAEON STRAIN BS3 INVOLVED IN THE NITROGEN CYCLE
By: Olayemi Akintunde
Pre-Health
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 136 UL1 DISPLAY ONLY
DOES BS3 USES SULFATE AS ENERGY METABOLISM?
By: Rizafaye Pada
Biology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 137 UL2 DISPLAY ONLY
PLASMID DESIGN TO HELP CHARACTERIZE THE HAx ENZYME
By: Robin A. Herbert
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 138 UL2
COLORECTAL ADENOCARCINOMA: A COMPARATIVE STUDY
By: Summer Reames and Jenna Bottorff
Biology
Faculty Advisor: Gloria Nusse

Entry Number: 139 UL2
THE PROTEIN JAGUNAL IS REQUIRED FOR PROPER EYE DEVELOPMENT IN DROSOPHILA
By: Jose Ortega Jr.
Cell & Molecular Biology
Faculty Advisor: Dr. Blake Riggs

Entry Number: 140 UL2
THE ROLES OF CLASSICAL MHC I ON NEUROGENESIS
By: Alan Gutierrez
Cell & Molecular Biology
Faculty Advisor: Dr. Saul Villeda

Entry Number: 127 UL1
VITAMIN PRODUCTION OF BS3 IN HYPER THERMAL ENVIRONMENTS
By: Mona Saadi
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 128 UL1
UNDERSTANDING THE EVOLUTION OF BS3 THROUGH ORTHOLOGY
By: Olivia Pham
Cell & Molecular Biology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 129 UL1
YOU ARE WHAT YOU EAT / CARBON DIOXIDE METABOLISM OF ARCHAEA FROM BEOWULF SPRINGS
By: Robin A. Herbert
Microbiology
Faculty Advisor: Dr. José R. de la Torre

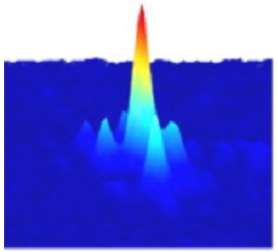
Entry Number: 130 UL1
CRISPR-CAS SYSTEM IN THAUMARCHAEOTA ARCHAEON STRAIN BS3 THROUGH COMPARATIVE GENOMIC STUDIES AGAINST RELATED THERMOPHILIC ARCHAEA
By: Roxanne Tadina
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 131 UL1
CELL DIVISION MECHANISM OF THAUMARCHAEOTA ARCHAEON STRAIN BS3
By: Zhainib Adel Amir
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 132 UL1 DISPLAY ONLY
THAUMARCHAEOTA BS3 MAY SHOW A SENSE OF DEQUORUM
By: Christian Mariano
Biology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 133 UL1 DISPLAY ONLY
CENTRAL, ENERGY, AND CARBON METABOLISM IN BS3
By: Haig Sadakian
Biology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 74 GP1
ROBUST DESIGN OF SPIN TRANSFER TORQUE LOOK-UP TABLE MEMORY UNDER PROCESS VARIATIONS IN NANO-SCALE
By: Ali Attaran
Energy System Engineering
Faculty Advisor: Dr. Hamid Mahmoodi



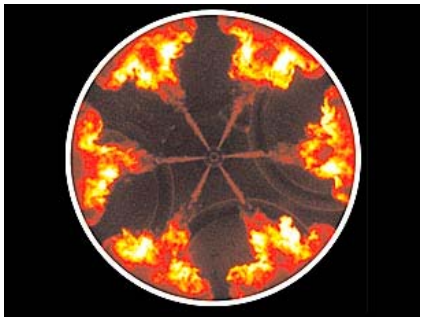
Entry Number: 75 GP1 DISPLAY ONLY
APPLICATION OF FANO RESONANCE EFFECTS IN OPTICAL ANTENNAS FORMED BY REGULAR CLUSTERS OF NANOSPHERES
By: Ali Attaran
Energy System Engineering
Faculty Advisor: Dr. Zhigang Chen (Physics)

Entry Number: 76 GP2
FUNDAMENTAL PERIOD PREDICTION OF STEEL PLATE SHEAR WALL STRUCTURES
By: Benjamin Kean
Structural & Earthquake Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 77 GP2
DELAY EFFECT ON MODEL UNCERTAINTY IN REAL-TIME HYBRID SIMULATION
By: Kai Chen
Structural & Earthquake Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 78 GP2
LATERAL BRACING OF MOMENT FRAME BEAMS
By: Nadia Makoor and Charles Cao
Structural & Earthquake Engineering
Faculty Advisor: Dr. Cheng Chen

Entry Number: 79 GP2 DISPLAY ONLY
SYNTHESIS AND TRAPPING OF ACYLFULVENES
By: Ariel Kuhn
Chemistry
Faculty Advisor: Dr. Ihsan Erden



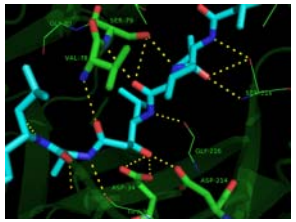
Entry Number: 80 GP2
THE EFFECT OF STRUCTURE AND MORPHOLOGY ON PHOTOOXIDATION IN EPITAXIAL TIO2(001) THIN FILMS
By: Marissa Martinez
Chemistry
Faculty Advisor: Dr. Andrew Ichimura

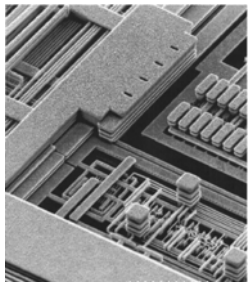
Entry Number: 81 GP2 DISPLAY ONLY
TERRAIN-BASED PREDICTIVE MODELING OF FUNCTIONAL RIPARIAN CORRIDORS IN A COASTAL NORTHERN CALIFORNIA WATERSHED
By: Tom Robinson
Geographic Information Science
Faculty Advisors: Dr. Jerry Davis and Dr. Nancy Wilkinson

Entry Number: 82 GP2
CLIMATE VARIABILITY AND VADOSE ZONE CONTROLS ON DAMPING OF TRANSIENT RECHARGE FLUXES
By: Claudia Corona
Applied Geoscience
Faculty Advisor: Dr. Jason J. Gurdak

Entry Number: 83 GP2 DISPLAY ONLY
DETECTING GLOBAL HYDROLOGICAL CYCLE INTENSIFICATION ON GLOBAL OCEAN SALINITY ANOMALIES
By: Jason Poague
Geosciences
Faculty Advisor: Dr. Alexander Stine

Entry Number: 84 GP2
A TALE OF TWO ISLANDS: CAN ATOLL ISLAND'S ADAPT TO CLIMATE CHANGE BY REMOVING VEGETATION AND MANAGING AQUIFER RECHARGE?
By: Mehrdad Hejazian
Applied Geoscience
Faculty Advisors: Dr. Jason J. Gurdak and Dr. Mary Leech





Entry Number: 120 UL1
IRON CYCLING IN THAUMARCHAEOTA ARCHAEON STRAIN BS3
By: Huey Li
Biochemistry
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 121 UL1
FIGHTING CRIME: HOW THAUMARCHAEATA ARCHAEON STRAIN BS3 DEFENDS AGAINST VIRUSES
By: Jenny Tapang
Cell & Molecular Biology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 122 UL1
TYPE IV TOXIN-ANTITOXIN SYSTEM IN THAUMARCHAEAOTA ARCHAEON STRAIN BS3
By: Joseph Lau
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 123 UL1
ACETOIN UTILIZATION IN THAUMARCHAEOTA ARCHAEON BS3
By: Juliana Nzongo
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 124 UL1
THAUMARCHAEOTA BEOWULF SPRINGS 3 COBALAMIN BIOSYNTHESIS
By: Kimberly Mitchell
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 125 UL1
CELL DIVISION PROTEINS IN THAUMARCHAEOTA ARCHAEON STRAIN BS3
By: Lara Ramos
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 126 UL1
HEAT RESISTANCE PROTEINS IN THAUMARCHAEOTA ARHAEON BS3
By: Mifune Takahashi
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 113 UL1
HEPN AND NT_KNTase_LIKE GENES TO RESIST A WIDE RANGE OF AMINOGLYCOSIDE ANTIBIOTICS IN THAUMARCHAEAOTA BS3 FROM YELLOWSTONE NATIONAL PARK, WYOMING
By: Adam Carcamo
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 114 UL1
FUNCTIONAL ANALYSIS AND SIGNIFICANCE OF SUF COMPLEX IN CREATION OF FE-S CLUSTERS
By: Adam Josef
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 115 UL1
ARCHAELLUM AND MOTILITY OF BS3
By: Andres Pineda
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 116 UL1
CARBON MONOXIDE METABOLISM IN THAUMARCHAEOTA BS3
By: Anna Portelli
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 117 UL1
THAUMARCHAEOTA ARCHAEON STRAIN BS3 DEFENSE AGAINST THE DARK ARTS: VIRAL PHAGES AND INVADING DNA
By: Brittany Baker
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 118 UL1
EXPLORING L-CYSTEINE BIOSYNTHESIS IN THAUMARCHAEOTA ARCHAEON STRAIN BS3
By: Bushra Mariam Bibi
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 119 UL1
FE(III) REDUCTASE GENES IN THAUMARCHAEOTA ARCHAEON BS3: A COMPARATIVE STUDY BETWEEN BACTERIA AND ARCHAEA
By: Diane Custodio
Microbiology
Faculty Advisor: Dr. José R. de la Torre

Entry Number: 85 GP2
TESTING THE INFLUENCE OF LIGHT AVAILABILITY ON A TREE-RING RECONSTRUCTED TEMPERATURE RECORD AT SONORA PASS, CA
By: Lan Ma
Earth & Climate Sciences
Faculty Advisor: Dr. Alexander Stine

Entry Number: 86 GP2
SEDIMENTARY CONTROLS ON FORAMINIFERA DEPOSITION IN THE BAY OF BENGAL
By: Theresa Fritz-Endres
Earth & Climate Sciences
Faculty Advisor: Dr. Petra Dekens

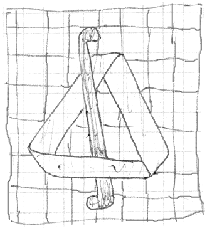
Entry Number: 87 GP2 DISPLAY ONLY
SPECTRA OF TROPICAL LAPLACIANS OF BALANCED GRAPHS
By: Anna Schindler
Mathematics
Faculty Advisor: Dr. Federico Ardila

Entry Number: 88 GP2
MAXIMUM LIKELIHOOD ESTIMATION AND EM FIXED POINT IDEALS FOR BINARY TENSORS
By: Daniel Lemke
Mathematics
Faculty Advisor: Dr. Serkan Hosten

Entry Number: 89 GP2
GENERALIZED EULERIAN NUMBERS AND THE DELTA-POLYNOMIAL FOR HALF-OPEN LATTICE PARALLELEPIPEDS: A GEOMETRIC PERSPECTIVE
By: Emily McCullough
Mathematics
Faculty Advisor: Dr. Matthias Beck

Entry Number: 90 GP2
THE DEHN--SOMMERVILLE RELATIONS AND THE CATALAN MATROID
By: Nicole Yamzon
Mathematics
Faculty Advisor: Dr. Federico Ardila

Entry Number: 91 GP2
MAXIMUM LIKELIHOOD DEGREE OF VARIOUS TORIC VARIETIES
By: Radoslav Vuchkov
Mathematics
Faculty Advisor: Dr. Serkan Hosten

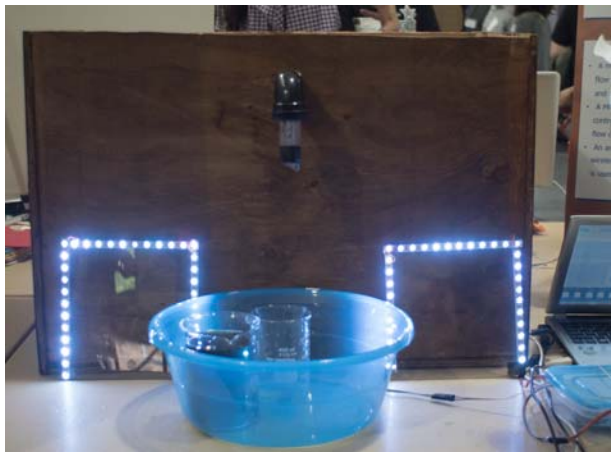


Entry Number: 92 GP2
BIVARIATE ORDER POLYNOMIALS
By: Sandra Zuniga Ruiz
Mathematics
Faculty Advisors: Dr. Matthias Beck and Dr. Federico Ardila

Entry Number: 93 GP2
KINEMATICAL EVIDENCE FOR TWO-ZONE EARLY-TYPE GALAXY FORMATION
By: Justin A. Kader
Astronomy
Faculty Advisor: Dr. Ron Marzke

Entry Number: 94 GP2
STELLAR COMPANIONS TO THE EXOPLANET HOST STARS HD 2638 AND HD 164509
By: Justin Wittrock
Astronomy
Faculty Advisor: Dr. Stephen Kane

Entry Number: 95 GP2
DISORDERED PHOTONIC STRUCTURES: MANIPULATING THE FLOW OF LIGHT
By: Shervin Sahba
Physics
Faculty Advisor: Dr. Weining Man



Entry Number: 107 UI
THE EFFECT OF CLIMATE CHANGE ON THE DISTRIBUTION OF THE LYME DISEASE VECTOR IXODES PACIFICUS AND THEIR HOST SCELOPORUS OCCIDENTALIS
By: William O'Neill
Zoology
Faculty Advisor: Dr. Andrea Swei

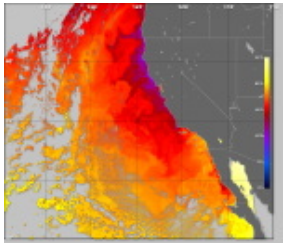
Entry Number: 108 UI DISPLAY ONLY
THE HEALTH OF VULNERABLE COMMUNITIES AND CLIMATE CHANGE: EXAMINING THE ROLE OF PUBLIC POLICY AND NURSING
By: Zahra Hamidi, Dr. Shannon Lea Watkins, and Dr. Tendai Chitewere
Nursing
Faculty Advisors: Dr. Shannon Lea Watkins, and Dr. Tendai Chitewere

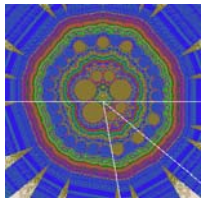
Entry Number: 109 UI
ESTIMATING ERROR RATES IN FORENSIC GENETICS
By: Kristine Roque
Applied Mathematics
Faculty Advisors: Dr. Rori Rohlfs and Dr. Tao He

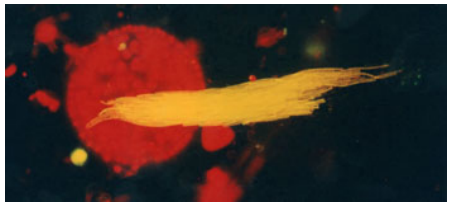
Entry Number: 110 UI
CELESTA: A CATALOG OF EARTH-LIKE EXOPLANET SURVEY TARGETS
By: Colin Chandler
Astrophysics
Faculty Advisor: Dr. Stephen Kane

Entry Number: 111 UI
EVOLUTION OF PARTICLE ANGULARITY IN GRANULAR AND DEBRIS FLOWS
By: Molly Mclaughlin
Geology
Faculty Advisor: Dr. Leonard Sklar

Entry Number: 112 UI
THERMODYNAMIC MODELING OF FIVE ULTRAHIGH-PRESSURE TERRANES
By: Brandon Swanson
Geology
Faculty Advisor: Dr. Mary Leech







Entry Number: 101 UI
COASTAL COMMUNITY VULNERABILITY:
A PROJECT DESIGN ON THE EFFECTS OF RECIPROCITY
ON RESILIENCE AND ADAPTABILITY
By: Adrielle B. Cailipan
Marine Biology
Faculty Advisors: Dr. Tendai Chitewere and Dr. Shannon L. Watkins

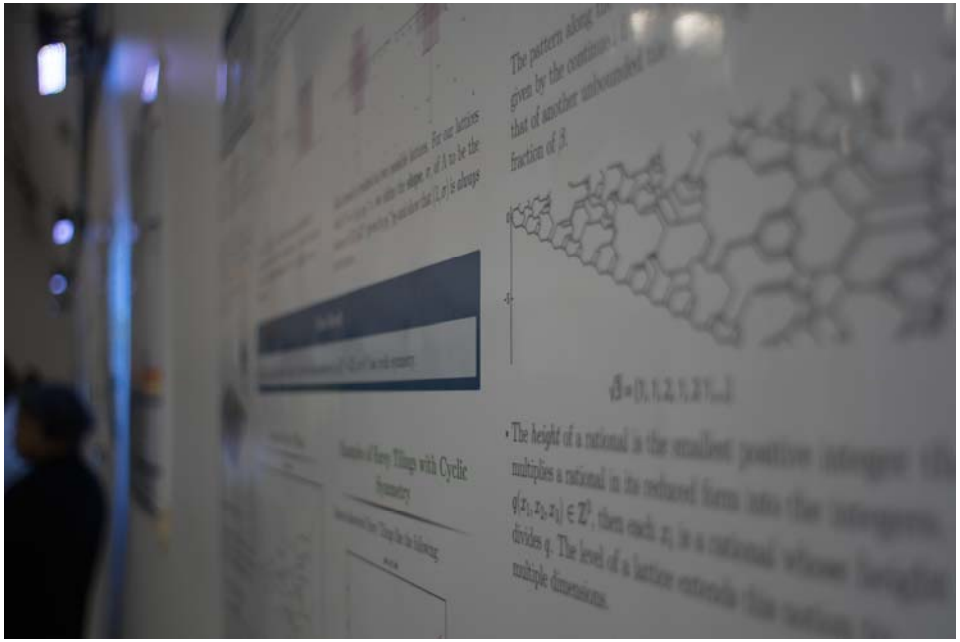
Entry Number: 102 UI
OBOT: HEALTH, CLIMATE CHANGE, AND ENVIRONMENTAL
INJUSTICE IN WEST OAKLAND
By: Agustina Cartagena
Geography
Faculty Advisor: Dr. Tendai Chitewere

Entry Number: 103 UI
CLIMATE CHANGE AND THE SACRAMENTO-SAN JOAQUIN
DELTA: A CASE STUDY OF BETHEL ISLAND
By: J. Javier Padilla Reyes
Geography
Faculty Advisor: Dr. Nancy Wilkinson

Entry Number: 104 UI
REFRIGERATION SYSTEMS AND CLIMATE CHANGE
By: Jose "Polo" Chavez
Mechanical Engineering
Faculty Advisor: Dr. Ed Cheng

Entry Number: 105 UI
STATISTICAL EVALUATION OF HIGH-RESOLUTION P
RECIPITATION FORECASTS IN THE BAY AREA AND CALIFORNIA
By: Nicholas Christen
Earth Sciences
Faculty Advisor: Dr. David Dempsey

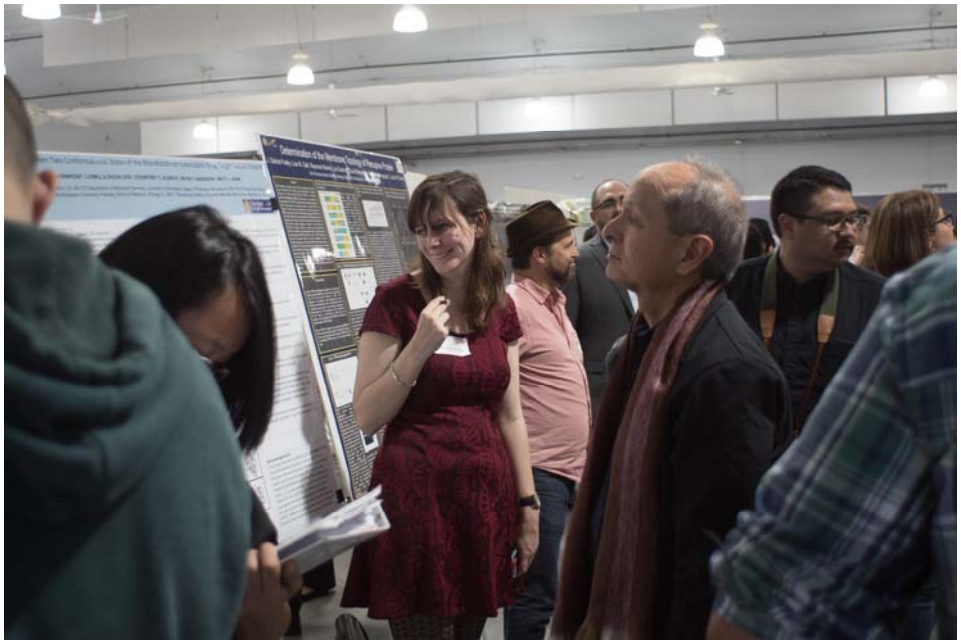
Entry Number: 106 UI
EFFECTS OF VEGETATION OF THE URBAN HEAT
ISLAND
By: Robert Shortt
Geography
Faculty Advisor: Dr. Andrew Oliphant



96 – 219 are from Undergraduate Students

Entry Number: 96 UI
A POTENTIALLY INTRIGUING TRIANGLE:
COOPERATION, COMPETITION AND PREJUDICE
By: Reza Deiss Ghafur
Psychology
Faculty Advisor: Dr. Charlotte Tate

Entry Number: 97 UI
AGING FACES: GUESSING AGE AND ASCRIBING AGING STEREOTYPES
By: Hannah Lee
Psychology
Faculty Advisor: Dr. Sarah J. Barber



Entry Number: 98 UI
EVALUATING THE BOND BETWEEN HUMANS
AND THEIR COMPANION ANIMALS
By: Meghan Quan
Psychology
Faculty Advisor: Dr. Caran Colvin

Entry Number: 99 UI
TIME ORIENTATION AND SELF-ESTEEM IN YOUNG ADULTS
By: Erica Walker
Psychology
Faculty Advisor: Dr. Zena R. Mello

Entry Number: 100 UI
THE EFFECT OF MEDIA AND MESSAGE TYPE ON PUBLIC PERCEPTION
OF POLICE MISCONDUCT
By: Jessica G. Burgos Pimentel
Psychology
Faculty Advisor: Dr. Caran Colvin