31ST ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM

PROCEEDINGS OF THE 2010 SYMPOSIUM

Convened on

Friday, April 23, 2010

in the

University Business Center

California State University, Fresno

31st ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM

PROCEEDINGS

Sponsoring Institutions

California State University, Fresno
Office of Research and Sponsored Programs

University of California, San Francisco
Fresno Medical Education Program

Alliant International University

Fresno City College

American Chemical Society
San Joaquin Valley Section

Convened in the *University Business Center*
on the campus of

California State University, Fresno

Friday, April 23, 2010

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PREFACE

Welcome to the *31st Annual Central California Research Symposium.*

From its inception, the purpose of this symposium has been to bring together investigators, students, and faculty from a variety of disciplines to share the results of their scholarly work. The continuation of these activities in the Central Valley is encouraged by this opportunity for exchange. We hope that all participants will gain new insights from this experience and that learning about the interests of other scholars will enrich their academic journey.

Abstracts for this year's event were reviewed and selected for presentation by the Symposium Coordinating Committee. In this review, the committee looked for a well-written abstract on a topic of scholarly merit.

This year *UCSF Fresno* has provided two cash awards for the best symposium presentation by a student--one for an undergraduate student and one for a graduate student. *Alliant International University, Fresno* has provided a cash award for the best poster presentation by a student. The *American Chemical Society, San Joaquin Valley Section* has sponsored a cash award for best science presentation. The *Office of the Provost* at *California State University, Fresno* has provided a cash award for best undergraduate poster and best undergraduate oral presentation. The *Division of Graduate Studies* at *California State University, Fresno* has provided a cash award for best graduate presentation. The *Craig School of Business* at *California State University, Fresno* has sponsored a cash award for best poster presentation. The *Central California Autism Center,* under the direction of Dr. Amanda Adams, has sponsored a cash award for best undergraduate presentation. The Davin Youngclarke Memorial Award, inaugurated in 2008 and sponsored by the *Office of Research and Sponsored Programs* at *California State University, Fresno,* is awarded to the presenter who best addresses a community issue with use of sophisticated and sound research methods. In addition to providing three cash awards, the *Office of Research and Sponsored Programs* at *California State University, Fresno* has planned and administered the symposium in cooperation with these institutions.

Presenters and guests are invited to a social hour following the concluding address and student awards ceremony, which will be held in the Alice Peters Auditorium in the University Business Center.

These proceedings are published as a permanent record of the work presented. We hope they will stimulate ideas for future work and subsequent symposia.

PLANNING COMMITTEE

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO FRESNO MEDICAL EDUCATION PROGRAM

Donna Hudson, Ph.D.
Symposium Co-Chairperson

Joan Voris, M.D.
Michael Peterson, M.D.
Paul K. Mills, Ph.D.
Kent Yamaguchi, M.D.

CALIFORNIA STATE UNIVERSITY, FRESNO

Thomas McClanahan, Ph.D.
Symposium Co-Chairperson

Mark Arvanigian, Ph.D.
Saeed Attar, Ph.D.
Sharon Benes, Ph.D.
Jason Bush, Ph.D.
Daniel Cady, Ph.D.
Alejandro Calderon-Urrea, Ph.D.
Karen Carey, Ph.D.
Ramakrishna Nunna, Ph.D.
Karl Oswald, Ph.D.
Brian Tsukimura, Ph.D.
Doug Carey

ALLIANT INTERNATIONAL UNIVERSITY, FRESNO

Siobhan O'Toole, Ph.D.

FRESNO CITY COLLEGE

Carl Johansson
Rick Stewart

EVENT AND PROCEEDINGS COORDINATORS

Millie C. Byers & Maral Kismetian
California State University, Fresno

CALIFORNIA
STATE
UNIVERSITY,
FRESNO

April 8, 2010

MESSAGE TO ALL RESEARCH SYMPOSIUM PARTICIPANTS

California State University, Fresno is pleased to serve as the host campus for the 31st Annual Central California Research Symposium.

This symposium continues to provide a unique forum for the presentation and discussion of scholarly activities of interest to researchers throughout the Fresno Community. The program for the symposium reflects our commitment to promoting interdisciplinary research, encouraging scholarly exchange on theoretical and pragmatic topics, and providing an opportunity for both students and research scholars to share common interests. Cooperative efforts such as these benefit the individual institutions involved and ultimately the public that we all serve.

We appreciate your participation in this symposium, and it is my pleasure to extend my warmest welcome to our campus.

Sincerely,

John D. Welty
President

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dean@fresno.ucsf.edu

WELCOME

31st Annual Central California Research Symposium
April 23, 2010

On behalf of UCSF Fresno, it is my pleasure to welcome you to the 31st Annual Research Symposium. This Symposium offers a marvelous opportunity for students, faculty and others to showcase their research right here in the Central Valley and to gain experience in presenting their findings in both oral and poster presentations. For the visitor, it offers an opportunity to see a diverse group of research projects and to enjoy the richness of the academic activity that is evidenced here today.

Whether you are attending today as a participant or a visitor, I believe you will feel challenged and energized as you explore the research projects on display.

Sincerely,

Joan Voris

Joan Voris
Associate Dean, UCSF Fresno Medical Education Program
Assistant Clinical Professor of Pediatrics, UCSF

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INTERNATIONAL UNIVERSITY

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April 8, 2010

Dear Symposium Participants:

The Fresno campus of Alliant International University, which includes the California School of Professional Psychology, the Marshall Goldsmith School; of Management, the Shirley M. Hufstedler School of Education and the California School of Forensic Psychology is honored to be a sponsor of the 32nd Annual Central California Research Symposium.

Not only is important research being conducted at the higher educational institutions and hospitals in Central California, but these institutions are also training our next generation of researchers. We are pleased to have this opportunity to support and participate in highlighting research achievements.

By featuring the work of Central California researchers from the diverse fields, the symposium provides an exciting view of the broad expanse of research taking place in Central California. We look forward to learning about the research you are conducting.

Respectfully,

Penny J. Schafer

Penny Schafer
Director of Campus and Student Services
Alliant International University, Fresno/Sacramento

Fresno City College
1101 East University Avenue, Fresno, California 93741 Phone: 559-442-4600 FAX: 559-265-5777

Office of the President

April 8, 2010

Symposium Participants
Central California Research Symposium
University Grants and Research Office
California State University, Fresno
4910 North Chestnut Avenue
Fresno, CA 93726-1852

Dear Symposium Participants:

Fresno City College is pleased to be a sponsor of the 31st Annual Central California Research Symposium. This cooperative venture not only advances the frontiers of knowledge but leverages the research resources of each participating institution. Fresno City College is proud to be a partner in hosting this program and extends best wishes to all participants.

I hope the Symposium will be both informative and enjoyable for you.

Sincerely,

Cynthia E. Azari, Ed.D.

lmw

Concurrent Session A

University Business Center
Auditorium, Room 191

10:00 ***Shelving Self: identity politics in Oscar Wilde's comedies of manners***
Kristin Baer, Larry G. Riley, PhD

10:15 ***Renegotiating the Racialized Classroom Space: Race as Presence***
Maryam Jamali Ashtiani, Samina Najmi,PhD

10:30 ***Racializing Classroom Spaces: Remixing "The Rising Tide of Color" and White Femininity***
Jocelyn Stott, Samina Najmi, PhD

10:45 ***The Rhetoric of Mango Street: Reconciling the Oppression of Chicana Feminists***
Miriam Fernandez, Samina Najmi, PhD

11:00 ***An Evaluation of the Efficacy of Supplemental Instruction at Fresno City College***
Janine Nkosi, Albert Valencia, PhD

11:15 ***The Effects On Noncontingent Reinforcement On Rapport Building In Children with Autism***
Alyson Padgett, Amanda Adams, PhD

11:30 ***Different-subject (DS) converbs in Yakut***
Lena Vasilyeva, Brian Agbayani, PhD

12:00 Plenary Session

Concurrent Session B

University Business Center
Room 192

10:00 ***Synthesis and characterization of Ni(bis(O-ethyl-L-cysteinato))***
Randall Hart, Melissa Golden, PhD

10:15 ***The Metal Ion Content of Drosophila melanogaster expressing Copper-Zinc Superoxide Dismutase (CuZnSOD)***
Cindy Xiong, Joy Goto, PhD

10:30 ***Synthesis and Characterization of New, Chiral P-N Ligands and Their Use in the Palladium-Catalyzed Asymmetric Allylic Alkylation***
Kurtis Thiesen, Saeed Attar, Ph.D.

10:45 ***The Oxygenation and Oxidation of Bis(o-ethyl-L-cysteinato) Nickel(II): A Study of Toxicity to Zinc Fingers***
Samantha J. Gustafson, Melissa Golden, PhD

11:00 ***Mechanism of the reaction of Propylene Oxide with Chlorine atoms***
Srikar Middala, Sean Campbell, Catalina Olea, Austen Scruggs and Alam Hasson, PhD

11:15 ***Amyloid Precursor Protein (APP) Proteolytic Processing In The Presence Of â-Methyl Amino Alanine (BMAA) Cycad Neurotoxin***
Rana Elayyan , Joy Goto, PhD

11:30 ***6-Oxoverdazyl Reactivity with Preoxides***
Thanh Ngoc Le, David J.R. Brook, PhD

12:00 Plenary Session

Concurrent Session C

University Business Center
Room 182 A

10:00 ***The Effects of Cortisol on the Hormonal Regulation of Appetite in the Tilapia***
Whitney Janzen, Larry G. Riley, PhD

10:15 ***Instrumentation for Measuring Specific Heat of Strongly Correlated Electron Materials***
Ulises Urbina, Pei-Chun Ho, PhD

10:30 ***Constructing a Multiplexer (Scanner)***
Johnathon J. Thompson, Pei-Chun Ho, PhD

10:45 ***BshA, a glycosyltransferase, catalyzes the first step in bacillithiol biosynthesis***
H. Upton*, J. Newton**, M. Gushiken*, R. C. Fahey**, and M. Rawat

11:00 ***Short-Interval Time Perception in an Oddball Task: An ERP Study***
Celeste Pilegard, Crystal Hernandez, and Martin Shapiro, PhD

11:15 ***Evaluating the Effects of the kNOw More Peer-Education Program on Relationship Abuse***
Kimberly Kilgore, Marilyn Wilson, PhD

11:30 ***Implementation of the PALS Curriculum in a Resource Room by Assigning Cross-Grade Peers***
Timothy Michael Yeager, Marianne L. Jackson, Amanda N. Adams, PhD

12:00 Plenary Session

Concurrent Session D

University Business Center
Room 194

10:00 ***How to keep alleyways clean in the City of Fresno***
Deanna Cox; Deyra Ozgoc-Caglar, PhD

10:15 ***This is Not A Test - Madden Library's Web Usability Study***
Kimberly Arnold, Henry Delcore, PhD

10:30 ***This Is Rasta Music! An Investigation into the Interconnectedness of Rastafari and Reggae Music***
Monique Posadas, Guadalupe Salazar, PhD

10:45 ***Interrogation of Evil: Human Fault in Understanding Natural Forces***
Joseph A. Moreno, Carlos A. Sanchez, PhD

11:00 ***Understanding and Addressing Factors That Contribute to Intimate Partner Violence as Experienced by Latinas***
Brenda Ochoa, Elena Klaw, PhD

11:15 ***The Intersections of Religion, Sexuality & Culture: What Does It Mean to Be A Lesbian Mexican-American Mother?***
Jessica Chavez, Roksana Badruddoja,, PhD

11:30 ***The Levying of Two Matthews: Discourse and Symbolism***
Andy Martinez, Ashley Lucas, PhD

12:00 Plenary Session

Plenary Session

University Business Center
Auditorium, Room 191

12:00 Opening Remarks and Welcome

Dr. Thomas McClanahan, California State University, Fresno

Dr. Donna Hudson, University of California, San Francisco
Fresno Medical Education Program

12:10 ***Atmospheric Chemistry of Organic Peroxy Radicals***
Sean Campbell, Sam Hernandez, Sukh Singh, Yesenia Ibarra, Srikar Middala, Geoff Tyndall, John Orlando and Alam Hasson. PhD

12:25 ***Boys and Girls: Gender Differences in Outcomes of Parental Abuse***
Lance Zimmerman; Andrea Ormonde; Kristin Greenawald, Siobhan O'Toole, PhD

12:40 ***Proteomic Evaluation of Pesticide-Resistant Breast Cancer Cell Lines***
Julie Hale, Fiona Yamamoto, Jason Bush PhD

12:55 ***Personality and Language Fluency in Expatriate Assignments***
Melissa M. Freeman, Julie B. Olson-Buchanan, PhD

1:10-1:30 **Break--University Business Center, Gottschalks Gallery**

Concurrent Session E — University Business Center Auditorium, Room 191

1:30 ***Canine Heartworm (Dirofilaria immitis) in Fresno and Madera counties, CA: prevalence differences between foothill and valley floor habitats***
Laura Miller, Paul Crosbie PhD

1:45 ***Insecticide Resistance and The Efficacy of Ground ULV Applications in Fresno County, CA***
Jodi J. Holeman, F. Steve Mulligan III, Fred Schreiber, Anthony J. Cornel and Paul R. Crosbie , Ph.D.

2:00 ***Synthesis and Characterization of Gd and Nd Nanoparticles***
Dulce G. Romero, Pei-Chun Ho, Saeed Attar, PhD, Dennis Margosan

2:15 ***Dipteran Species Richness and Abundance on Re-vegetated Agricultural Land***
Rain Healer, Fred Schreiber, PhD, Paul Crosbie, PhD

2:30 ***Towards the generation of transgenic lines of Caenorhabditis elegans and Meloidogyne incognita using the microparticle bombardment method***
Venu Polineni, Alejandro Calderón-Urrea, PhD

2:45 ***The Growth characteristics of Dunaliella primolecta and Botryococcus braunii in fruit waste water and development of a protocol to generate transgenic algae***
Preethi Sarvabhowman, Alejandro Calderon Urrea, PhD

3:00 ***The Effects of a Glutamate Agonist, L-BMAA, on Motor-movements of Adult Fruit Flies***
Nalong Tom Mekdara, Ulrike Muller, PhD

3:15 – 3:30 Break--University Business Center, Gottschalks Gallery

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session F

University Business Center
Room 192

1:30 ***Acculturation, Parent-Child Conflict, and Academic Adjustment for Hmong Adolescents***
Amanda Ulrich, Robert Levine, PhD

1:45 ***The Moderating Effects of Anxiety on Impulsivity in College Students with Intermittent Explosive Disorder***
Vincent Aguirre, Christine Edmondson, PhD

2:00 ***Visual Similarity Ratings of Aquatic Plants and Animals by Undergraduates***
Janet Cisneros, Kristi Willis, Lara Triona, PhD, Jennifer Rigney, Maureen Callanan

2:15 ***California Hispanic Nurses: Analysis of 1997, 2004, 2006, 2008 Survey Data***
Adelita Tinoco, Michelle Tellez, PhD

2:30 ***On the Well-Covered Dimensions of Various Individual Graphs and Graph Families***
Isaac Birnbaum; Oscar Vega, PhD

2:45 ***Financial Forecasting using Data Mining***
Luna Tjung, Ojoung Kwon, PhD

3:00 ***Cultural Interpretations of London: A Panel of Ethnographies from Across the Pond***
Kaelyn Rodriguez, Jennifer Zenovich, Paw Vue , Shane Moreman , PhD

3:15 – 3:30 Break--University Business Center, Gottschalks Gallery

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session G

University Business Center
Room 286
Dean's Conference Room

1:30 ***Behavioral Predictions of Women Inmates: The Unfortunate â€¨Effect of Low Facial Prominence***
Justin L. Matthews, Teenie Matlock, PhD

1:45 ***Timing of speech and display affects the linguistic mediation of visual search***
Eric Chiu, Michael Spivey PhD

2:00 ***Psychological and Physical Benefits of Mindfulness es***
Eric Diddy, Siobhan O'Toole, PhD, Mark Kent

2:15 ***The Effects of Verbal Abuse on Adolescent Males: An Attachment Theory Perspective***
Mark Kent , John William Boyd, PsyD, Siobhan O'Toole, PhD

2:30 ***The Impact of the College Assistance Migrant Program on Migrant Student Achievement in the California State University System***
Adrian Ramirez, Ron Unruh, PhD

2:45 ***Decision-Making in a Confidence-Based Gambling Task***
Pablo Morales, Martin Shapiro, PhD

3:00 ***Profiling Coral and Bacterial Response to Yellow Band Disease***
Collin J. Closek, Shinichi Sunawaga, Michael K. DeSalvo, Todd Z. DeSantis, Yvette M. Piceno, Eoin L. Brodie, Christian R. Voolstra, Gary L. Andersen, Mónica Medina. PhD

3:15 – 3:30 Break--University Business Center, Gottschalks Gallery

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session H

University Business Center
Room 194

1:30 ***The ABCD Conundrum: Women, Marriage, and Alternative Formations of Power***
Roksana Badruddoja, PhD

1:45 ***School-based Sexuality Education vs. Parent-Child Communication: Are Either Delaying Onset of Sexual Intercourse or Increasing Condom Use?***
W. Gregory Thatcher, MSPH, PhD

2:00 ***Factors Influencing the Matriculation Decisions of Applicants to the Jordan College of Agricultural Sciences and Technology at California State University, Fresno***
Desiree Molyneux, Steven J. Rocca. PhD

2:15 ***Social Time and Space Related to the Notion of Festivity Through the Hmong American New Years***
Kao-Ly Yang , PhD

2:30 ***When You See Dead People: Paranormal "Sightings" as Eyewitness Events***
Matthew J. Sharps, PhD, Elaine Newborg, Stephanie Van Arsdall, Brianna Alcantar, Jordan DeRuiter

2:45 ***A Taxonomic Categorization of Modern Manufacturing Paradigms***
Arun N Nambiar, PhD

3:00 ***The Real Exchange Rate and the Current Account***
Gil Kim,PhD, Lian An, and Yoonbai Kim

3:15 – 3:30 Break--University Business Center, Gottschalks Gallery

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session I — University Business Center Auditorium, Room 191

3:30 ***Effects of Acute Stress on Hormonal Regulation of Food Intake in Tilapia***
Kelli R. Upton and Larry G. Riley, PhD

3:45 ***The Effects of Fasting and Re-feeding on the Neuroendocrine Control of Appetite in Tilapia, Oreochromis mossambicus***
Rosemary R. Luzania, Kelli R. Upton, Ryan L. Earley, Larry G. Riley, PhD

4:00 ***Investigating the role of methyl farnesoate on fecundity in the tadpole shrimp, Triops longicaudatus***
Michael Tran

4:15 ***Methyl farnesoate regulation during reproduction of the tadpole shrimp, Triops longicaudatus***
Mike Gledhill, Brian Tsukimura, PhD

4:30 ***A Key to Identify Mitten Crab Megalopae in the San Francisco Bay Estuary***
Vanessa Gonzales, Brian Tsukimura, PhD

4:45 ***Nutrient Composition of Alpaca (Vicugna pacos) Milk*** Stephen Minter, Elise Chad, Jon Robison, PhD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session J

University Business Center
Room 192

3:30 ***Comparison of Three Soil Reclamation Techniques for Growing Processing Tomatoes in Westside SJV***
Prasad Yadavali, Florence Cassel S., PhD, Dave Goorahoo. PhD

3:45 ***Efficacy of a Slow Release Nitrogen Fertilizer Formulation***
Shashi K.R. Yellareddygari, Dave Goorahoo. PhD, Florence Cassel S.. PhD

4:00 ***Measurement and Monitoring of Bedload Sediment Transport along the Upper San Joaquin River***
Douglas DeFlitch, Zhi Wang, PhD

4:15 ***Interactive Effects of Mechanized Canopy Management and Reduced Deficit Irrigation on Shiraz Grapevines***
Dave B. Terry, S. Kaan Kurtural, PhD

4:30 ***Study on Next Generation Technology Systems andTheir Developments for Food and Agriculture***
Ravinder Guda, Nitaigour Mahalik, PhD

4:45 ***Multiresolution technique based algorithm for sensor fault detection and Isolation***
Rupinder Kumari, Nitaigour Mahalik PhD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session K

University Business Center
Room 286
Dean's Conference Room

3:30 ***Environmental Protection Science: Missing Pieces in Bio-inventories, an Exploratory Study into the Science of Underground Bio-surveys***
Kathryn J. Biacindo, PhD

3:45 ***Genetic Evidence of Permethrin Resistance in the Human Head Louse (PEDICULUS HUMANUS CAPITIS) from the San Joaquin Valley and San Francisco Bay Area, California***
Paul R. Crosbie, PhD, Jennifer Talbot

4:00 ***Antibiotic fungi and proteins in the diet of small primates of Panama***
Derek Madden, Cathy Snyder, Devin Jones, Sierra Madden

4:15 ***A New Lariat Structure and Biochemical Mechanism for Grape Cytochrome P450 Monooxygenase Gene CYP736B Pre-mRNA Splicing***
Davis W. Cheng, Alejandro Calderon-Urrea, PhD

4:30 ***Disparities in Cancer Survival within the South Asian population of the United States, 2000-2006***
Ratnali V Jain MD,MS, Paul K Mills PhD, MPH

4:45 ***Necrotizing Enterocolitis in Term Infants: A Case Series***
Mathew Fruzza, DO; Jennifer McDermott, MD; Robert Dimand, MD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Concurrent Session L

University Business Center
Room 194

3:30 ***Understanding how dendritic fields established in Caenorhabditis elegans***
Alejandro J. Escalante-Flores, Maria Gallegos, PhD

3:45 ***Implementing the point-neuron model in Simbrain*** Christopher Estep, Jonathan Vickrey, Jeffrey Yoshimi, PhD

4:00 ***Single-Dose Etomidate for Intubation in the Trauma Patient***
Hanifi Abdullah, S. James , K. Banh, MD, B. Snowden B.,E. Hendey. MD

4:15 ***Test Room Design for the Observation of Particulate Matters Arising Out of Agricultural Management Strategies***
Francisco Villasenor, Jose Jauregui, Diganta Adhikari, Nitaigour Mahalik, PhD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Poster Session I
10:00 a.m. until 11:30 a.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 10:00 a.m. until 11:30 a.m.

(1) ***An Exploratory Study Assessing the Relationship between Symbolic Racism and Social Dominance Orientation in a Multicultural Environment***
Simon Howard, Neelam Rattan, PhD

(2) ***Identifying Culturally Competent Clinical Skills in Speech-Language Pathologists Working in the Central Valley of California***
Christine A. Maul, M.A., CCC-SLP, A.B.D., Ashley Henderson

(3) ***Effectiveness of carrier RNA co-extraction methodologies using the Qiagen BioRobot EZ1® and EZ1® DNA Investigator Kit***
Johnny Upshaw, Colleen Proffitt, MS, Kevin Miller, PhD

(4) ***Perceived Superiority in Romantic Relationships: Blaming the Partner for Undesirable Features***
Chris Kaundart; Paul Price, PhD

(5) ***Reading Interests: A Comparison of Required Reading and Recreational Reading among College Students and its Impact on Academic Success Defined by College Grades***
Ariana B. Lopez, Sharvari Dixit PhD

(6) ***Optimal Strategies for a ride and tie race***
Phillip Williams, Ellen Veomett, PhD

(7) ***An Analysis and Representation of German Phonetic Construct Evidenced in a Bavarian Dialect with High German Dialectal Influence***
Britney M. Neufeld, Chris Golston, PhD

(8) ***Three Stage Vibration Isolation for Unmanned Aerial Vehicle Gimbal Targeting System***
Jose Rivera, Gemunu Happawana, PhD, Patrick Reilly, Walter Mizuno, PhD

(9) **Development of Protocols for Enrichment of Specific Endocytic Vesicles Involved in β3 Integrin Recycling in a Cell Culture Model**
Nathan Piestrup, Jinsha Liu, Jason Bush, PhD

(10) ***Correcting for the effects of evaporation on the GCMS analysis of ignitable***
Pahoua Xiong, Seth L Yates, Eric C Person PhD

(11) ***Experimental Study of Structural, Electrical, and Optoelectronic Properties of Zinc Oxide Nanostructures***
Sung Kyu Lee, Daqing Zhang, PhD

Poster Session I Continued
10:00 a.m. until 11:30 a.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 10:00 a.m. until 11:30 a.m.

(12) ***Using TAG Teaching to Decrease Toe Walking in a Child with Autism***
Angela Persicke, Marianne Jackson, PhD

(13) ***The Impact of Physician at Intake on Patient Care and Staff Satisfaction at an Academic Emergency Department***
Jennifer Johnson, P. Armenian, L. Weichenthal, MD, D. Campagne,MD, G. Kallsen, MD, Brandy Snowden

(14) ***Kinetics of the Reaction of Propylene Oxide with Chlorine Atoms***
Catalina Olea, Sean Campbell, Srikar Middala, Jeff Cole and Alam Hasson, PhD

(15) ***Individual Differences in the Tendency to Transmit Negative Gossip***
Shih Ying Toh, Robert Levine, PhD

(16) ***A Qualitative Study of the Refugee Hmong in Fresno County California: Health Beliefs about Childhood Injury and Health***
Grace Hatmaker, RN, MSN, Michael Russler, PhD

(17) ***Tolerance of Acanthamoeba to low Oxygen levels: Implications for Pathogenicity***
Ivan Cometa, Andrew Rogerson,PhD

(18) ***Effect of Physicians' Expressions of Uncertainty and Physician Sex on Patient Perceptions***
Janna Tassop, Paul C. Price PhD

(19) ***Non-Template Polymerization of Nucleotides into Genetic Elements by Thermophilic DNA Polymerase in Vitro***
Davis W. Cheng, Alejandro Calderon-Urrea, PhD

(20) ***A New Challenge: Application of Epigenetic Theory and Methods in Plant Breeding***
Davis W. Cheng, Alejandro Calderon-Urrea, PhD

(21) ***On-Custodial Divorced Fathers: A Qualitative/Quantitative Review on the Relationship between Father/Child Contact and Emotional Well-Being Among***
Christopher Gonzales Jr.,Shavari Dixit , PhD

(22) ***Protein Analysis of the Ontogenetic Changes of the Skeletal Muscle Protein in Zebrafish (Danio rerio)***
Shraddha Kamat, UlrikeMüller, PhD, Joy Goto, PhD

Poster Session I Continued
10:00 a.m. until 11:30 a.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 10:00 a.m. until 11:30 a.m.

(23) ***Investigating the Expression Dynamics of Cell Adhesion Genes during Gastrulation inNematostella vectensis***
Aditi Prashar, Craig R. Magie, PhD

24) ***Implementing Domain-Specific Languages using Service-Oriented Architecture***
Adam Cardenas, Shih-Hsi Liu, PhD, Xang Xiong, Marjan Mernik, Barrett R. Bryant, Jeff Gray

(25) ***Scholar Athletes: Education, Sports, and Coming of Age in Los Angeles, 1940-present***
Frank J. Ortega, Ana Elizabeth Rosas, PhD

12:00 Plenary Session

Poster Session II
1:30 p.m. until 3:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 1:30 p.m. until 3:00 p.m.

(1) ***Preliminary Evidence Suggest that Tadalafil (Cialis®) Improve Healing in a Rat Flap Model***
Johnathan Wilbanks, D. Lollar, C. Moon, A. Shinkawa, S. Pai, K. Sian, Glenda Polack,PhD. K. Yamaguchi

(2) ***The Concept of Client-Side Programming as the Driving Force of Complex Computation in Web Based Applications***
Jason Hild, James P. Prince, PhD

(3) ***On the Role of Humanoid Agents and Linguistic Factors in Perspective-Taking***
Michelle D. Greenwood, Teenie Matlock, PhD, Michael J. Spivey, Justin L. Matthews

(4) ***Evaluation of the Use of Infra-Red Photo-Acoustic Detection for Measuring Pollutant Emissions from Dairy Facilities***
Austen Scruggs, Sean Campbell, Catalina Olea, Alvaro Sosa, Alam Hasson, PhD

(5) ***SAE BAJA***
Luke Clark, Ethan Bennett, Rebecca Rossol, Jennifer Montee, Ludwin Cruiz, Mark Coelho, Scott Kuenzinger, Justin Graham, Ben Hyatt, Hussein Zewlam, Ashley Trautt

(6) ***The Effects of Air Pollutants and Pulmonary Function***
Kennedy- Kiet Tuan Vu, Alam Hasson, PhD

(7) **Extrusion Processing of Fruit Pomace**
Preetan Sarkar, Gour S. Choudhury, PhD

(8) ***A Qualitative Study of Three Community Groups in the San Joaquin Valley Emerging Neighborhood Groups and Relations of Social Capita***
Kris Clarke, PhD

(9) ***The Brief Symptom Inventory***
Sean Hornsby, Christine Edmondson, PhD

(10) ***Imaging Changes from Partial Breast Radiation Therapy by Various Approaches – IORT, SAVI, CONTURA***
Elizabeth Tong; Jimmin Chang, PhD, Haydee Ojeda, MD

(11) ***Description of Diabetic Patients by Nephropathy (kidney disease) Status***
Jay Hariharan, MD, Saira Khan, MD, Susan Hughes

Poster Session II Continued
1:30 p.m. until 3:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 1:30 p.m. until 3:00 p.m.

(12) ***Structural Studies of Di-μ-chloro-bis[(η6-ethoxybenzene)chlororuthenium(II)]***
Steven A. Chabolla, Melissa L. Golden,PhD, Daniel Rios, Saeed Attar, PhD

(13) ***Characterization of bis(O-Ethyl-L-Cysteinato)nickel(II): Understanding broadened 1H-NMR signals***
Gregory R. Harnden, Melissa L. Golden, PhD

(14) ***Characterization of various repetitive elements in pepper (Capsicum annuum)***
Shayn T. Scheidt; James P. Prince, PhD

(15) ***A Comparison of Facial Composite Likeness Measures***
Stephanie Butler, Amrita Bassi, Danny Pavlovich, Karl Oswald, PhD

(16) ***The Creation and Validation of the Loneliness Engagement Scale***
Christopher D. Hernandez, Jennifer Ivie, PhD

(17) ***Temperley-Lieb Algebra Representation of Braid Groups***
Ana-Cristina Jimenez, Carmen Caprau, PhD

(18) ***Optimization of Data Transformation for Chromatography Using Petroleum Distillates***
Andrea Smith, Brett Messer, Jenny Harmon, Eric Person, PhD

(19) ***College Student Attitudes toward Mental Health Treatment***
Casey Cauble, Sean Hornsby, Christine Edmondson, PhD

(20) ***Optimal Methods of Iclicker Use in a Classroom Setting***
Michael Junio, Dario Santiago, Natalie Xavier, Karl M. Oswald, PhD

(21) ***Geospatial Wine Grape Quality Modeling for Optimum Sampling Strategy***
George Mathew Mazhuvancheriparambath, Balaji Sethuramasamyraja, Harvinder Singh, Sivakumar Sachidhanantham, Robert L. Wample, PhD

(22) ***The Effects of Fire and Forest Thinning on Seed Weight of Conifers in the Sierra Nevada, Teakettle Experimental Watershed***
Cha Moua, Jamie Marquez, Ruth Ann Kern, PhD

Poster Session II Continued
1:30 p.m. until 3:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 1:30 p.m. until 3:00 p.m.

(23) ***Training a Fish to Perform Voluntary Turns for High Speed Video Recording and Kinematic Analysis***
Samuel Jimenez, Otto Berg, Ulrike Müller, PhD

(24) ***Phosphorus flamethrower: Allotrope demonstration***
Miriam Bejar, Jonathan Powell, Eric Person, PhD, Donnie Golden, Melissa L. Golden. PhD

(25) ***Zoledronic acid (Zometa®) Preferentially Induces Cell Death in a Bone Metastasizing Breast Cancer Cell Line***
Cynthia Contreras, Shaghayegh Morshedian, Walid Hamud, Jason A. Bush, PhD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Poster Session III
3:30 p.m. until 5:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 3:30 p.m. until 5:00 p.m.

(1) ***New Infrastructure for Panama to Aid Rural Farmers and Promote Economic Development***
Jon C. Phillips, PhD, Samantha Hilbon

(2) ***Efficacy of Physical Therapy Intervention on Fear of Falling in Community-Dwelling Older Adults***
Maria Teresa Garcia, MPT, Preeti Deshpande, PT, PhD

(3) ***A candidate gene strategy to identify resistance genes in pepper to Phytophthora capsici***
Deanna Arsala, James Prince, PhD

(4) ***Development of transgenic tobacco plants containing a nematode xylotransferase RNAi gene: a novel approach for plant parasitic nematode control***
Alexander Guzzetta, Alejandro Calderón-Urrea PhD

(5) ***Placement of Demographic Questions on Survey Item Nonresponse***
Nicole Arbabzadeh and Jennifer L. Ivie, PhD

(6) ***Extraction Efficiency of Methamphetamine in Forensic Casework***
Maria Woodcock, Eric Person , PhD

(7) ***Eyewitness Memory for Faces at Tactical Speeds***
Elaine Newborg, Matthew J. Sharps, PhD, Emanuel Alcala, Cassi Franklin

(8) ***Comparing Different Radiological Modalities for Evaluating Breast Implant Complications***
Elizabeth T. Tong, Jimmin Chang, PhD, Mao Yiu Tong, MD

(9) ***The Analysis of Bowling for Players with Different Techniques***
Guillermo Castaneda Jr., Ke Wu, PhD

(10) ***DNA Extraction from Calcified Tissues: A Comparative Study Using Hydroxyapatite and Carrier RNAs***
Ashley Rose Mohammadi, Kevin Miller, PhD

(11) ***The Interaction Between Alzheimer's Disease-Related Proteins, APP and X11***
Pranav Bhatt, Joy J. Goto, PhD

Poster Session III
3:30 p.m. until 5:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 3:30 p.m. until 5:00 p.m.

(12) ***Identifying Mating Type of Phytophtora Capsici Isolates***
Heather N. Brewer, Claudia Garcia, Gurmel Sidhu, James P. Prince, PhD

(13) ***Improving IPM of House Flies at Commercial Dairy Operations through Pest Monitoring and Determination of Nuisance Threshold***
Lea Pereira, G.E. Higginbotham, A.C. Gerry, Jon Robison, PhD

(14) ***Characterization of Oxazolidine Byproducts in Methamphetamine Laboratory Casework***
Rebecca Stalker, Mark Kalchik, Eric Person, PhD

(15) ***Composted Municipal Green Waste as an Economically- and Ecologically-Sound Germination Media for Use in the California Vegetable Transplant Industry***
Brent Tenison, C. Cadena, C. Correia, and J.T. Bushoven, PhD

(16) ***A Component Analysis of the Effects of Graduated Exposure and Differential Reinforcement on Phobic Behaviors***
Jonpaul D. Moschella, Marianne Jackson, PhD., B.C.B.A., Amanda Nicolson Adams, PhD, B.C.B.A.,Amanda Mortimer,, PhD

(17) ***Response of Soil Moisture Sensor Readings to Soil Temperature***
Gerardo Orozco, Diganta D. Adhikari & Dave Goorahoo, PhD

(18) ***Function and Expression Dynamics of Rho, Rac and Cdc42 genes in the Starlet sea anemone, Nematostella vectensis***
Setareh Khalili, Craig R. Magie, PhD

(19) ***Evaluation of an Eco-fertilizer and Urea Ammonium Nitrate for Growing Bell Peppers***
Natalio Mendez, Dave Goorahoo, PhD, and Florence Cassel S., PhD

(20) ***Comparing Facial Composite Software Effectiveness In Correct Target Identification***
Natalie M. Xavier, Amrita Bassi, Celeste Pilegard, Karl M. Oswald, PhD

(21) ***Comparative Responses of Native California Grass Species to Drought: Potential Significance for Restoring Retired Agricultural Land***
Cha Moua, Conrad Braganza, John V.H. Constable, PhD

Poster Session III
3:30 p.m. until 5:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 3:30 p.m. until 5:00 p.m.

(22) ***Beneficial and Harmful Effects on Memory for related Information using Iclickers***
Dario Santiago, Michael Junio, Stephanie Butler, Karl M. Oswald, PhD

(23) ***Tracking the fate of Acorns in Oak Woodlands***
Raymond Gutteriez, Madhusudan Katti, PhD

(24) ***Using Flourence Microscopy to Characterizing the Neurospecificity of the Environmental Toxin, BMAA***
Savann Hok, Joy J. Goto, PhD

5:00 Concluding Address—Alice Peters Auditorium, Room 191
Bringing Blogs into the Classroom
Xuesong (Sonya) Zhang. Ph.D.

Proceed to Student Awards Presentations and Social Hour

Judges for Undergraduate and Graduate Student Presentations and Poster Presentations:

Dr. Loren Alving	University of California, San Francisco
Dr. Saeed Attar	California State University, Fresno
Dr. Sharon Benes	California State University, Fresno
Dr. Jason Bush	California State University, Fresno
Dr. Alejandro Calderon-Urrea	California State University, Fresno
Dr. Kathleen Dyer	California State University, Fresno
Ms. Marie Fisk	California State University, Fresno
Ms. Grace Hatmaker	University of California, San Francisco
Dr. Donna Hudson	University of California, San Francisco
Ms. Susan Hughes	University of California, San Francisco
Ms. Ronna Mallios	University of California, San Francisco
Dr. Thomas McClanahan	California State University, Fresno
Dr. Paul K. Mills	University of California, San Francisco
Mr. Steve Nasse	California State University, Fresno
Dr. Karl Oswald	California State University, Fresno
Dr. Michael Peterson	University of California, San Francisco
Dr. Jim Prince	California State University, Fresno
Mr. Chuck Radke	California State University, Fresno
Dr. Jeffrey Rosenfeld	University of California, San Francisco
Mr. Rick Stewart	Fresno City College
Dr. Brian Tsukimura	California State University, Fresno
Dr. Kent Yamaguchi	University of California, San Francisco
Dr. Lynnette Zelezny	California State University, Fresno

Moderators for Oral Presentations:

Mr. Doug Carey	California State University, Fresno
Dr. Donna Hudson	University of California, San Francisco
Mr. Chuck Radke	California State University, Fresno
Dr. Brian Tsukimura	California State University, Fresno

Presentations will be judged based on the following criteria and considerations:

- Merit, creativity, timeliness, and value to an audience of scholars not necessarily from the same discipline
- Authors are encouraged to present their work using terminology suitable for a multi-disciplinary audience
- Results of completed work, as well as work-in-progress, for which there is preliminary data

ORAL PRESENTATION ABSTRACTS

(IN ALPHABETICAL ORDER BY PRESENTING AUTHOR)

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Hanifi Abdullah, James S., Banh K., Snowden B., Hendey E.
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Departments of Philosophy (Hanifi, A.), Emergency Medicine (all others)
Undergraduate Student

SINGLE-DOSE ETOMIDATE FOR INTUBATION IN THE TRAUMA PATIENT

Objectives: Concerns over the consequences of adrenal suppression caused by a single dose of Etomidate in the emergency department (ED) led us to limit its use in trauma patients in 2006. The objective of this study was to compare mortality, hypotension, ICU and hospital length of stay (LOS) for trauma patients requiring intubation during periods of liberal vs limited Etomidate use.

Methods: A retrospective review of trauma patients requiring emergent intubation who presented to our level 1 trauma center between August 2004 and December 2008, before and after we reduced the use of Etomidate in 2006. Using a standardized data collection form, trained research assistants collected data on demographics, induction agents used, episodes of hypotension in the first 24 hours, ICU and total hospital LOS, and survival. Two tailed Fisher's Exact and t-tests were used to compare proportions and means.

Results: Of 1325 trauma patients intubated in the ED during the study period, 443 occurred during the 23 months prior to July 2006 (liberal Etomidate use) and 882 in the 30 months after July 2006 (limited Etomidate use). There were no significant differences in patient demographic or injury severity between the two periods. During the liberal period, 258/443 (58%) were intubated using etomidate compared to 205/882 (23%, $p<0.0001$) during the period of limited use. We found no significant differences in mortality (30% vs. 29%, $p=0.70$), mean ICU days (8.2 vs. 8.8, $p=0.356$), or mean hospital LOS (13.8 vs. 14.4 days, $p=0.55$). Episodes of hypotension were more common in the limited etomidate use group (45% vs. 33%, $p<0.0001$).

Conclusion: A significant reduction in the use of Etomidate in trauma patients was not associated with differences in mortality, ICU days, or hospital LOS, but was associated with an increase in episodes of hypotension within 24 hours of admission.

Abstract details:
Design: Clinical, Observational, retrospective cohort
Category: Trauma
Key words: Trauma, intubation

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THE MODERATING EFFECTS OF ANXIETY ON IMPULSIVITY IN COLLEGE STUDENTS WITH INTERMITTENT EXPLOSIVE DISORDER

Intermittent explosive disorder (IED) is a behavior disorder characterized by recurring acts of severe aggression, which are disproportionate to the current situation. Since impulsivity is the most fundamental component of this disorder, and is most responsible for a lack of aggression management in those suffering from this illness, it would be advantageous to search for insight into how impulsivity varies in IED. Due to a high rate of comorbid anxiety in IED, the current study examines how anxiety can regulate impulsivity in aggression. After considering Gray's (1998) behavioral motivation system, and previous literature indicating correlates of anger-in (internalized expression of anger) and anger-out (anger directed outwardly to one's environment), we hypothesize that Individuals with IED are more impulsive than those who have a comorbid diagnoses of IED and anxiety. Additionally, we hypothesize that individuals with anxiety-only will have lower levels of impulsivity than individuals with IED only and individuals who have IED and anxiety.

Participants were 200 Fresno State Students seeking counseling at the campus mental health center. We used participant answers to the Brief Symptom Inventory (BSI) to diagnose anxiety disorders, and the Comprehensive International Diagnostic Interview Schedule (CIDI-DSM-IV) to diagnose IED. A structured anger interview was used to determine how participants would respond during anger provoking situations. During the interview, a research assistant presented audiotaped scenarios and participants explained what they would do and say if they experienced a similar situation. All responses were video recorded. Research personnel (Coders) coded (assessed) the videotaped responses to the interview in terms of how the participant responded in the interview and in terms what the participant would say and do in the situation. Coders evaluated the following variables: anger intensity, impulsivity in actual response, behavioral control, verbal aggression, physical aggression, motivation for reward, motivation to avoid punishment, functionality, disorderliness, and social skills. All variables were coded using 9 point Likert type scales. Between-subjects ANOVAs will be used to examine if there is a significant difference in levels of impulsivity among groups. In addition, several combinations of multiple-regression analyses will be used to examine if any rating scales were predictors or interact to predict levels in any other rating scales. To test our main hypothesis, we will utilize a multiple regression analysis to measure anxiety and IED as predictors of impulsivity, in addition to analyzing for an interaction between IED and anxiety

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THIS IS NOT A TEST - MADDEN LIBRARY'S WEB USABILITY STUDY

The Henry Madden Library at Fresno State has scheduled a redesign for its website in Fall 2010. In light of this, the Henry Madden Web Advisory Team called upon the Institute of Public Anthropology (IPA) to participate in its Web Usability

Study. Such studies have become important tools in understanding the effective use of websites. The need to provide students with a practical and useful website by which they are able to navigate and utilize all of the potential research opportunities is important to student success. Librarians understand how their website works because they are masters of research. However, how does the average student who does not have the skills of a professional librarian use the website?

This is the question we sought to answer. Each of the forty two Fresno State students recruited as participants, all of which were of junior status, were administered a test of ten questions, whereby they were required to navigate the librarys web site. A team of IPA student researchers administered the tests. Important to this particular study was the development, design and execution of the research project by the inter-disciplinary team of librarians, IT technicians and anthropologists. The research team drew on methods from the emergent field of design anthropology such as participatory (re)design and interaction design (IxD). The interviews were video- taped and recorded while simultaneously recording the student's movement through the website allowing for the opportunity to observe qualitative data alongside quantifiable data. Ultimately, this research project suggests that there are, indeed, ways to approach the redesign of the library's website that would benefit student's abilities in navigating the site and achieving academic success.

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THE ABCD CONUNDRUM: WOMEN, MARRIAGE, AND ALTERNATIVE FORMATIONS OF POWER

On an afternoon in September, I find myself with Padmini - a respondent involved in my field work. She reveals to me: "It was something very prominent in my mind [to marry] someone who can understand the language [my parents] speak...[But] none of my friends know the story of how I got married...I didn't want them to know after three dates with someone that my parents chose for me, I was getting married..."

Padmini talks to me about her "arranged marriage." She describes why it was important to her to have her parents' involvement in her partnership selection, while simultaneously voicing her embarrassment, especially as a South Asian-American woman – a gendered body marked by color and culture. Padmini insightfully problematizes the East/West divideor the binary and mutually exclusive categorization between American and South Asian.

In this paper, I explore the national debates on U.S. immigration and theories of assimilation and hybridity. Here, I focus on the role marriage plays in lives of "second-generation" South Asian-American women. I do this by presenting partial data from a twelve-month-long feminist ethnographic study. In 2004, I conducted in-depth semi-structured confidential day-long interviews with a cross-national sample of twenty-five second-generation South Asian-American women. I explored how informants respond to their families' expectations of marriage along with the women's own expectations of marriage.

What is being written into both the academic and popular narratives is a story of cultural displacement which evades the specificity of gender and depends on stereotypic propositions about America and South Asia. This lens lends to a view that South Asian-American women are part of a strict, inflexible, patriarchal, South Asian family, and the "westernized" second-generation have no choice but to rebel against their own culture. What I discover is that my research participants collapse the one-dimensional multicultural model by producing multiple and contradictory identities simultaneously.

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SHELVING SELF: IDENTITY POLITICS IN OSCAR WILDE'S COMEDIES OF MANNERS

Much of the scholarship that concerns itself with Oscar Wilde or his literary corpus has endeavored to define what the author 'means,' and critics remain vastly divided in opinion about who the 'real' Wilde was, or what he or his art signifies.

However, such studies have privileged deconstruction of Wilde's created selves or the autobiography of his writings, neglecting to appreciate Wilde as, not simply a witty nonconformist, but also someone exceptionally conscious of identity's fundamental pluralism. Throughout his life, Wilde was the consummate 'actor'—cultivating persona carefully from youth onward—and, I argue, such fixation with performance is distinctly evident within his writing as well. This is particularly true of his comedies of manners, wherein lead characters often seem acutely conscious of audience and uniquely preoccupied with generating and managing identity. Contending against Victorian notions of unified self-hood, many of his characters manufacture identities on the fly as necessity or desire demands, to manipulate cultural scripting and achieve various types of agency.

Ultimately, viewing Wilde's comedies as commentary on the calculated self-selectivity of performative identity helps explain the relevance of famously limpid Wildean personas like Jack Worthing, Algernon Montcrieff, Lord Goring, and Lord Illingworth. Largely situating my analysis in Smith and Watson's work, I illustrate how Wilde uses these characters to reevaluate the 'nature' of self story and to challenge the notion of a comprehensive biographical truth, describing the Self as an undulating, spontaneous, context-dependent performance that is inherently deceptive and artistic.

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ENVIRONMENTAL PROTECTION SCIENCE: MISSING PIECES IN BIO-INVENTORIES, AN EXPLORATORY STUDY INTO THE SCIENCE OF UNDERGROUND BIO-SURVEYS

Much has been done to survey and catalog species to protect the environment that supports these flora and fauna. In a series of recent bio-surveys of subterranean flora and fauna, it became apparent that many environmental protection schemas did not account for or consider its underground denizens. Categorized as an "out of sight, out of mind" phenomena, this presentation was designed to illustrate the bearing and importance of this bio-survey aspect for environmental studies, especially those which are the anchor point for industrial and recreational usage of land tracts.

Hands-on work in the field coupled with a review of prior studies of designated land tracts found that many had limited or dated bio-surveys from which environmental impact statements could not be reasonably made. The categories of troglobites, troglophiles, and trogloxenes were focal points, and it has been found that many new species have been discovered based on limited surveys done. These bio-unique species need to be considered in recreational or industrial use of the land tracts, and proper measure taken to protect them. Implications for biological inventory and science education have been recommended based on current findings.

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ON THE WELL-COVERED DIMENSIONS OF VARIOUS INDIVIDUAL GRAPHS AND GRAPH FAMILIES

The well-covered dimension *wcdim(G,F)* of a graph *G* is the vector space formed over a field ***F*** by the set of all well-covered weightings of *G*. In our talk, we will first explain what *wcdim(G,F)* is and how to compute it by using the weights on the maximal independent sets of *G* to construct a homogeneous system of linear equations. Then, we will demonstrate methods through which it is possible to compute *wcdim(G,F)* without knowing the maximal independent sets of *G*. Finally, we will present results obtained for various individual graphs and graph families, such as the crown graphs, through the utilization of these methods.

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Undergraduate Student

ATMOSPHERIC CHEMISTRY OF ORGANIC PEROXY RADICALS

The photochemical oxidation of organic pollutants in the atmosphere usually occurs via a complex series of reactions involving oxides of nitrogen (NOx), ozone, hydroxyl radicals, and peroxy radicals. When levels of NOx are low, however, products of these organic pollutants (organic peroxy radicals or RO2s) typically react with hydroperoxy (HO2) radicals.

Historically, only one channel for this reaction was known, and it was thought to act as a sink for RO2s and decrease overall radical concentrations in the atmosphere. Recent experimentation has shown, however, that select RO2s are capable of reacting via three channels, two of which do not act as a sink. These additional channels can lead to products very different from those produced by the first channel, including additional radicals and ozone. The goal of this work was to characterize the three known channels, and to determine the proportion of RO2 molecules that react via each channel (branching ratios) as a function of radical size, structural branching, and degree of functional group substitution.

To produce the RO2s desired for study, aldehydes or ketones were used as precursors. These were inserted, along with HO2 precursor and chlorine gas, into either a 142 L Teflon-lined reaction cell, a 25 L Tedlar bag, or a 47 L stainless steel reaction cell. The mixture was then exposed to light from 40 W blacklight lamps or a filtered xenon arc lamp, which photolyzed the chlorine and initiated the reaction. Fourier Transform Infra-Red (FTIR) Spectroscopy, Gas Chromatography-Flame Ion Detection (GC-FID), Gas Chromatography-Mass Spectrometry (GC-MS), and High Performance Liquid Chromatography (HPLC) were used to analyze the products.

The results indicated that when 2, 3, 4, and 5 carbon straight-chain aldehydes were used as precursors for RO2s, between 20-40% of the molecules reacted via the first radical sink pathway. Depending on carbon chain length, up to 60% of the molecules directly produced ozone, while the remaining 20-40% produced more organic radicals. The branching ratios measured for a structurally branched aldehyde varied from those observed using its straight-chain isomer as a precursor.

When ketones were used to produce the RO2s only two pathways were observed, and the branching ratios varied according to the degree of substitution of the carbon atom attached to the peroxy group. These previously unstudied reaction channels yield high amounts of products, but have never been incorporated into any atmospheric model; the investigation of this chemistry is therefore important in building better models to understand current trends in the atmosphere's composition and status.

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NUTRIENT COMPOSITION OF ALPACA (VICUGNA PACOS) MILK

Nutrition in the first months of life can either help or hinder the development and future production of an animal. Alpacas,known for their fine fiber, are no exception. Therefore, it is critical that we have a milk replacer that meets the needs of orphaned or poor-doing alpaca crias (young). Although there are nearly 150,000 animals in the US alone, to date there have nnot been any studies in North America on alpaca milk. Additionally, there are less than ten studies worldwide on South American Camelid milk composition. The objective of this study is to determine the nutrient composition of alpaca milk.

The study followed alpaca dams (n=13) through the first 12 weeks of lactation. After taping dams' teats for 2 hours, 15 ml of milk were collected by hand. Milk was tested for protein, lactose, fat, solids non-fat, milk urea nitrogen and somatic cell count on a weekly basis with infrared spectroscopy.

Fat levels varied between animals but stayed relatively consistent within the animal throughout the study. Lactose concentration declined over the course of lactation. The largest changes in protein were observed in the first four weeks of lactation.

Nutrient concentration in alpaca milk changed over the first 12 weeks of lactation. Fat appears to be dependent on individual animal genetics. This information may be helpful in formulating milk replacers for crias at different ages.

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THE INTERSECTIONS OF RELIGION, SEXUALITY & CULTURE: WHAT DOES IT MEAN TO BE A LESBIAN MEXICAN-AMERICANMOTHER?

It was a moment of realization. I honestly think she had never thought about it before. Maybe at some point in her life, in the back of her mind she thought about it, but never had she expressed her feelings aloud. Maria revealed: "I've always wanted to have something that was mine. So you can say I had them also because it was something that nobody could take away from me, it was, it's mine, that's it...They couldn't be taken away from me. And all my life I've always had things taken away from me and they couldn't. Nobody could."

Maria tells not only that she wanted kids, but why she wanted them. In a world where things aren't guaranteed, and those that should be, such as family, aren't, Maria wanted something nobody could take away. What we as individuals represent to ourselves and others, who we are, and how we feel about who we are, should be something that is not only guaranteed, but accepted by all. Starting from such a young age, Maria knew she was different. But instead of being able to embrace that, she was forced to hide it. She hid who she was for years. Her sense of self and what she represented was taken away from her by her family, her culture and her religion.

In this paper, I focus my research on Mexican, American, women, lesbians and mothers. The goal of this paper is to bridge the gap between lesbians and motherhood and bring the two concepts together in what could possibly become a new strand of lesbian discourse. In 2009, I conducted an in-depth interview with Maria, a Mexican-American lesbian woman.

Unlike most people's journey, Maria's difficult journey wasn't about finding out who she was. It was about being able to be who she truly was and being accepted by family and friends. However, there is a gap between Maria's story and the literary works of lesbian Chicana feminists. Maria is a mother of 3 children. She states she knew she always wanted children, in addition to knowing she had an attraction to women. This literature is missing from literary works.

Using Maria's story and literature provided to me by great Chicana women that have come before me, I attempt to not only provide information that supports their arguments, but to fill in the holes that they don't cover. While I did discover research that studied lesbian mother's experiences to understand how their experiences of motherhood compared and contrasted with the experiences of heterosexual mothers, the bridge between the gaps is not complete. What will complete this bridge is uncovering a new chapter in lesbian discourse; motherhood. Maria is a fantastic start to this new discovery that shall one day be completely unearthed.

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Faculty or Professional

A New Lariat Structure and Biochemical Mechanism for Grape Cytochrome P450 Monooxygenase Gene CYP736B Pre-mRNA Splicing

Pre-mRNA splicing occurs via a transesterification reaction mechanism in eukaryote. A critical question has been how the splicing sites on the pre-mRNA substrate for the transesterification reactions are determined.

Grape cytochrome P450 monooxygenase gene CYP736B contains two exons and one intron with GT as a donor site and AG as an acceptor site. We designed a PCR-based method with pairs of primers in "end-to-end" orientation to identify the branch points for CYP736B pre-mRNA splicing. We measured the pre-mRNA lariat structure and determined the chemical bonds at the branch points using the yeast lariat debranching enzyme yDBR protein.

Here, we report that a new lariat structure was dynamically formed between a branch point within the intron and various 5' sites within the exon in the grapevine CYP736B gene through a 2'-5' bonding reaction. Based on the current experimental evidence, we propose that the grapevine CYP736B pre-mRNA splicing would occur via three sequential transesterification reactions in five steps: (1) the 2'OH of the branch-point nucleotide within the intron performs a nucleophilic attack on multiple 5' nucleotides individually with different locations in the exon; (2) the nucleophilic attack induces nucleotide mutagenesis and mini-structural rearrangement within the branch point region and promote an exon-intron lariat intermediate formation; (3) the exon-intron boundary confined 5' splicing site is subsequently determined; (4) the 5' splicing site of the intron is released; and (5) the 3'OH of the released 5' intron then performs a nucleophilic attack at the last nucleotide of the intron at the 3' splice site thus joining the exons and releasing the intron lariat.

In conclusion, a new lariat intermediate structure with a novel biochemical reaction mechanism was discovered for grapevine CYP736B pre-mRNA splicing. This work may highlight our further understanding of the common mechanisms for gene expression and regulation in other eukaryotic systems.

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TIMING OF SPEECH AND DISPLAY AFFECTS THE LINGUISTIC MEDIATION OF VISUAL SEARCH

Recent studies have shown that instead of a dichotomy between parallel and serial search strategies, in many instances we see a combination of both search strategies utilized. Consequently, computational models and theoretical accounts of visual search processing have evolved from traditional parallel or serial descriptions to a continuum of "search efficiency". As a result, a Biased Competition account of visual attention predicts that a variety of sensory inputs can exert a graded influence on the efficiency of visual search. In our first experiment, we replicate previous findings regarding incremental spoken language comprehension on visual search processing utilizing a between subjects design. Next, a series of four experiments further explore the subtle timing of the influence of real-time language processing on visual search. The results provide further evidence toward understanding linguistically mediated influences on real-time visual search processing and support an interactive processing account of visual search and language comprehension.

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VISUAL SIMILARITY RATINGS OF AQUATIC PLANTS AND ANIMALS BY UNDERGRADUATES

Young children's biological reasoning could be influenced by the way that adults talk about living creatures. In a prior study, researchers examined the effect of using pronouns and intentional language on children's categorization of atypical animals. In one of the prior study's unexpected stimuli differences, the current study is exploring whether the pictures of the natural sea creatures have visual features that could have influenced the children's responses. Pairs and individual pictures of sea creatures were shown to the undergraduate students to rate them on similarity of background, brightness, colorfulness, size, shape, and texture. Due to the difficulty that the children had with three of the sea life pictures, the analyses compared the pictures of the atypical sea creatures (urchin, anemone, and sea star) to the pictures of animals and plants used in the study.

Sixty-one undergraduates viewed nine different pictures of sea life in pairs and were asked to rate them on how similar they were to each other based on the six visual features (on a scale of 1-9, 1 being least similar and 9 being most similar). They were also asked to rate the pictures on how similar the pictures were in background, brightness, colorfulness, size, shape, and texture. The pair ratings were averaged together to determine whether undergraduates thought the atypical sea creatures were more similar to the plants or to the typical animals. The individual ratings of each of the atypical sea life were compared to the plants and typical animal averages to obtain difference scores as a corroborating measure of visual similarity.

Paired samples T-test revealed that there were significant differences between comparing the atypical sea creatures to the plants and typical animals in both conditions (pair ratings and individual ratings). These findings indicate that undergraduate students saw visual differences between the atypical sea creatures and the animals that mimic the difficulties that the children had in their biological reasoning. Results from the individual visual features ratings confirm that the aesthetic attributes of these specific pictures differ in ways that match children's conceptual errors.

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PROFILING CORAL AND BACTERIAL RESPONSE TO YELLOW BAND DISEASE

Coral reefs are one of the most productive and biologically diverse ecosystems in the world; unfortunately, they are also highly endangered. Human population growth and environmental change have been noted to attribute to coral mortality and more recently disease events. In the Caribbean Sea, Yellow Band Disease (YBD) is widespread and is known to affect several coral species including Montastraea spp., which are dominant reef building species in this region. Corals have symbiotic algae and other associated microbial organisms, which together comprise the coral holobiont. As an integral part of the coral holobiont, bacteria are used as indicators of coral health. To better understand the holobiont response to disease, this study used both cDNA microarrays and high-density 16S rRNA gene microarrays. These techniques are used to investigate the transcriptomic response of the coral host as well as to profile the abundance and diversity of bacteria associated with M. faveolata displaying phenotypic signs of YBD. Using these high-throughput approaches, we are aiming to 1) survey the coral-associated microbial community, 2) aid the discovery of novel bacteria, and 3) identify disease-causing pathogen candidates. The results of this work unveil specific host genomic response to YBD, levels of magnitude of coral-associated bacteria not yet revealed, and refine our understanding of bacteria associated with M. faveolata under healthy and diseased conditions.

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HOW TO KEEP ALLEYWAYS CLEAN IN THE CITY OF FRESNO

The City of Fresno, California has been experiencing the exhausting problem of unauthorized dumping in the cities alleyways for many years. It raises significant concerns regarding public health and safety, property values, environmental pollution, economic effects and quality of life. Unauthorized dumping often attracts potentially hazardous wastes such as asbestos, household chemicals and paints, automotive fluid, and commercial or industrial wastes. Dump sites also serve as magnets for additional dumping and other criminal activities. As a result of illegal dumping, property values decrease and the community becomes unattractive to commercial and residential developers. Without the tax revenues that accompany development, the funding available to establish and maintain effective illegal dumping prevention programs is limited. Ultimately, it is the development of areas susceptible to illegal dumping that eradicates the problem. Based on stakeholder complaints, code enforcement documents, collection zone schedules, public records, government documents from the City of, we have identified patterns that exist throughout these neighborhoods. We implemented Multiple Criteria Decision Analysis (MCDA) tools, which utilize a decision matrix to provide a systematic analytical approach for integrating risk levels, uncertainty, and valuation that enables evaluation and ranking of many alternatives.

This study included tours of neighborhoods, interviews with government officials, community groups, and industry representatives. Problem areas were identified, mapped, and analyzed then tied with community programs currently utilized in Fresno. Similar programs were investigated that have proven successful in addressing unauthorized dumping and reviewed their applicability for Fresno.

This study uncovered that clearly defined, widely supported, and strictly enforced policies and programs that have a bottom up approach to implementation are the most likely solution to the unauthorized dumping problem within the city alleyways. An effective illegal dumping prevention program involves local government, industry, and community stakeholders working together to address the problem in a defined area.

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GENETIC EVIDENCE OF PERMETHRIN RESISTANCE IN THE HUMAN HEAD LOUSE (PEDICULUS HUMANUSnCAPITIS) FROM THE SAN JOAQUIN VALLEY AND SAN FRANCISCO BAY AREA, CALIFORNIA

Pediculus humanus capitis, human head lice, are parasitic arthropods with many populations that have evolved drug resistance to the chemical permethrin, a common component of louse treatment shampoos. Resistance to permethrin is correlated with four point mutations that occur simultaneously within the sodium channel α-subunit gene of the headlouse nuclear genome. The prevalence of resistance within and between louse populations varies geographically, and the exact location of resistant populations within the United States, including California, is unknown. This study investigated the prevalence of resistance and phylogenetic relationships within and between louse populations in the greater San Francisco Bay (SFB) area and Fresno, California. All lice collected in the SFB area (n = 134) were resistant to permethrin; in Fresno, 12 of 52 lice (21.15%) were susceptible. Susceptible lice formed a distinct clade in phylogenies resolved by Maximum Parsimony (all 12 lice), Neighbor Joining (11 of 12 lice) and Bayesian Methods (all 12 lice), indicating restricted gene flow between susceptible and resistant lice. This study was the first to utilize sequence data from the locus expressing resistance to resolve evolutionary relationships between louse populations.

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MEASUREMENT AND MONITORING OF BEDLOAD SEDIMENT TRANSPORT ALONG THE UPPER SAN JOAQUIN RIVER

The San Joaquin River is a highly utilized and manipulated hydrologic system. Its transformation from the mid-1800's to present is perhaps the most dramatic alteration of any of the Central Valley Rivers. These alterations impose tremendous challenges to restoration of the system. The objective of this thesis was to measure the dynamics of sediment transport along a section of the main stem of the San Joaquin River from Gravelly Ford to the Chowchilla Bypass Bifurcation Structure (Reach 2A) and compare the results with predictions made by a working model for the river. On-site quantitative measurements of the sub-aqueous topography were gathered using acoustic doppler radar and GPS (Global Positioning System) techniques. The volumes of sediment scour and deposition were calculated using spatial analyses in GIS (Geographic Information System). Results show that the sediment bed of the study reach is mobile and the simulation models using the fixed-bed assumption under-predicts the capacity in the study reach. The one dimensional sediment transport model underestimates the amount of deposition for the lowest part of the sub-reach, and over-estimated the amount of scour for the entire subreach. These results can be used to explore opportunities to modify the physical system to benefit riparian habitat and/or gain conveyance capacity in Reach 2A.

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PSYCHOLOGICAL AND PHYSICAL BENEFITS OF MINDFULNESS

Borderline Personality Disorder (BPD) is a serious mental health illness characterized by pervasive instability of mood, problematic interpersonal relationships and often life threatening self-harming behaviors. Individuals with BPD are flooding mental health practitioners' and physicians' offices to find relief from their symptoms, but they often go untreated because of complex presentations of these clients (Swales, Armstrong & Heard, 2000). Dialectical Behavior Therapy (DBT) is based on a set of psychosocial skills, including mindfulness, to help manage the common symptom clusters associated with BPD. Mindfulness is a concept that is defined as focusing one's attention on the present moment in a non-judgmental way.

DBT has been shown to increase adaptive functioning and reduce alcohol use in clients diagnosed with BPD and Alcohol Abuse/Dependence (McMain, Sayrs, Dimeff, & Linehan, 2007). Research shows that patients with greater levels of social support have a better chance of recovery from psychiatric disorders (Onken, Craig, Ridgway, Ralph, & Cook, 2007; Breir & Strauss, 1984). Additionally, social support has been shown to be an important factor associated with psychological health (Stansfeld, 2006). DBT includes a group therapy component that can potentially strengthen the social support networks of patients with BPD.

The current study looked at participants enrolled in DBT programs in five states to see how mindfulness was related to physical and emotional health, as well as alcohol use and social support. Preliminary statistical analyses have shown that DBT participants with higher levels of mindfulness report greater emotional wellbeing, general physical health, social functioning, and social support than DBT participants with lower levels of mindfulness ($p < .05$). Participants with higher levels of mindfulness also take fewer prescription medications, use less health care services, and consume less alcohol. Our initial results show that higher levels of mindfulness are associated with positive physical, emotional, and social outcomes.

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AMYLOID PRECURSOR PROTEIN (APP) PROTEOLYTIC PROCESSING IN THE PRESENCE OF â-METHYL AMINO ALANINE (BMAA) CYCAD NEUROTOXIN

Alzheimer's disease (AD), the most common form of dementia, is pathologically correlated with the presence of amyloid-â senile plaques and neurofibrillary tangles (NTFs) in neuronal brain regions. Amyloid-â (Aâ) is formed by the proteolytic cleavage of the amyloid precursor protein (APP), which involves the sequential cleavage of APP by â- and á- secretase containing-complexes followed by ã-secretase cleavage. The neurotoxin â-methylamino-L-alanine (BMAA) has been anticipated to contribute to the pathology of Amyotrophic Lateral Sclerosis-Parkinson Dementia Complex (ALS-PDC).

BMAA has been recently detected at high concentrations in the brain tissue of patients with AD. The pathological hallmarks of ALS-PDC have similarities to those observed in AD. My research is to determine how APP proteolytic processing may be altered in the presence of the putative neurotoxin BMAA. Ntera-2 cells (NT2), human neuronal cell lines, were cultured in the presence of BMAA (30, 100, 300, 1000 and 3000 iM) with and without 25 mM NaHCO3 for 24 hours. It is anticipated that bicarbonate buffer may be required for BMAA to be active; although BMAA is a glutamate agonist, it lacks the carboxylic acid chain of glutamate. BMAA in the presence of bicarbonate buffer binds the carbamate group at the amino group side chain to mimic glutamate. The total protein concentration and the total LDH released were measured for control and treated NT2 cells indicating the percentage of cell death. APP and its proteolytic fragments were also studied for control and treated cells using Western blot techniques.

Preliminary data showed that BMAA with and without bicarbonate buffer have no effect on cell's morphology. However, BMAA in the presence of bicarbonate buffer seems less toxic than BMAA without the buffer at concentrations higher than 1 mM. Glutamate, on the other hand, seems to be less toxic than BMAA either in the presence or absence of bicarbonate buffer at a concentration of 1 mM or higher. Neither Glutamate nor BMAA in the presence or absence of bicarbonate buffer has a significant impact on APP expression.

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UNDERSTANDING HOW DENDRITIC FIELDS ESTABLISHED IN CAENORHABDITIS ELEGANS

Mechanosensory neuron dendrites in most organisms are arranged in a tiled fashion at the body surface. They are tiled so that an organism can locate sensory stimuli. Studies done in vertebrates and flies have suggested that dendritic tiling is most likely due to homotypic repulsion in which all neurons of the same modality repeal each other. However, research conducted by Dr. Maria Gallegos, suggest that homotypic repulsion is not a likely mechanism for dendritic tiling in C. elegans. During her research she observed that BDU, which in not a neuron of the same modality as PLM has a posterior process that touches the tip of PLM. Given the results of her experiment and this observation we hypothesized that heterotypic repulsion is what drives the tiling mechanism in C. elegans. My research focuses on four of the six light touch mechanosensory neuron in C. elegans, which are divided into an anterior domain (ALM right and left) and a posterior domain (PLM right and left). For this we used an unc-86 mutant strain of C. elegans, that during development it losses the ability to generate ALM and BDU neurons. Using fluorescence microscopy and Image J software we measured and analyzed the length of PLM in animals that lacked ALM/BDU versus that of animals that contained both ALM/BDU. The results of our experiment show that there is a significant neuron growth of nearly 16% more in mutant C. elegans without ALM/BDU versus "wild type" C. elegans. This suggests that heterotypic repulsion is playing a significant role in the tiling mechanism of mechanosensory neurons in C. elegans.

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THE RHETORIC OF MANGO STREET: RECONCILING THE OPPRESSION OF CHICANA FEMINISTS

Speaker 1, a Chicana female discusses how The House on Mango Street can be seen as a feminist and rhetorical text. Since it'spublication, Sandra Cisneros has received much literary acclaim for her work, however, there has been little examination of her work as a feminist rhetorical text. This essay seeks to place Sandra Cisneros within the rhetorical field, and more specifically as a Chicana feminist rhetorician. Using what Lisa Flores calls "a rhetoric of difference" and what Jessica Enoch describes as "the rhetoric of definition," I place Cisneros' The House on Mango Street within the feminist rhetorical tradition.

Using the cultural and historical context of the Malinche narrative and the Chicano political movement of the 1960s, I show the ways that Cisneros' text challenges cultural notions of patriarchy in the Chicano community in order to create a space for the Chicana feminists that have been rejected, oppressed and exiled. I argue that Cisneros' novel creates a space for Chicana feminists to reconcile the claims of betrayal that arose during the Chicano movement and subsequently sets herself apart as a Chicana feminist rhetorician. By exposing violence, encouraging female solidarity and using the strategy of un-naming men, Cisneros' novel becomes a powerful rhetorical tool that challenges sexist ideology—rooted in the long cultural history of la Malinche—that marks Chicana feminists as traitors. Ultimately, Cisneros is able to deconstruct the Malinche narrative and redefine the feminist identity in order to include it within the community rather than keep them outside of it.

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PERSONALITY AND LANGUAGE FLUENCY IN EXPATRIATE ASSIGNMENTS

Failed expatriate assignments are costly to organizations in terms of loss of human capital, time, and profits. Unfortunately, we understand very little about how to select employees who are most likely to do well on an expatriate assignment. Previous research suggests failure of international assignments is in part due to the expatriate's lack of cultural adjustment to the new environment. This study examines the relation between personality characteristics (the Big Five) and language fluency in the host country language with one aspect of expatriate success, cross-cultural adjustment.

Consistent with the hypotheses, we found relationships between several personality characteristics and cultural adjustment. Agreeableness and openness to experience were positively related to general and work cultural adjustment. Conscientiousness was positively related to general and interaction cultural adjustment. Language fluency was positively related to all three levels of cultural adjustment. Potential benefits from this research include more successful expatriate assignments by means of better selection criteria through personality or foreign language fluency.

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NECROTIZING ENTEROCOLITIS IN TERM INFANTS: A CASE SERIES

Purpose of Study: Necrotizing enterocolitis is a serious infection of the gastrointestinal tract that occurs predominantly in preterm neonates. However, about 10% of the time, NEC occurs in term infants. While the exact pathophysiology is unclear in term neonates, it is felt to be often related to infection, compromise to blood flow of the gut (such as hypoxic-ischemic injury), or congenital heart disease. However, we report two term neonates with no known predisposing factors for their presentation and course of NEC.

Methods Used: Case Series

Case #1: A 5-day old male presented with direct hyperbilirubinemia. According to the parents, he had been eating well with normal bowel movements and normal activity since birth. After evaluation by his pediatrician for jaundice, he was referred to the local ER for lab testing. From the ER, he was transferred to our tertiary Children's Hospital, he quickly decompensated; abdominal X-rays showed portal venous air and pneumatosis intestinalis of the small bowel, colon, and stomach. Ultrasound evaluation revealed air in the portal venous system and spleen. In the PICU, mechanical ventilation was instituted, triple antibiotics and bowel rest was initiated. He improved clinically and repeat X-ray findings showed no portal venous air, pneumatosis intestinalis, or perforation within 24 hours after treatment. After 3 weeks of gut rest, a lengthy colonic stricture was diagnosed. At no time was acidosis, renal impairment or hepatic impairment noted.

Case #2: A 28-day old male presented with fever and respiratory distress. Shortly after transfer to the tertiary Children's hospital, he developed worsening respiratory distress requiring intubation and mechanical ventilation. Several days after clinical improvement, he developed a tense, distended abdomen; abdominal X-rays showed areas suspicious for pneumatosis intestinalis. Despite negative lateral decubitus abdominal X-rays, four colonic perforations were discovered by urgent exploratory laparotomy and a subtotal colectomy was performed.

Conclusion: Although classically described in premature infants, NEC is a rare finding in term infants. The etiology and course of NEC in term neonates is unclear. In case #1, massive pneumatosis including stomach wall, small intestine, large intestine with portal venous air appeared to be much worse than the clinical presentation. In case #2, pneumatosis was less evident on radiographic studies, but severe, given the colonic perforations discovered by laparotomy. Despite the rarity of NEC in full-term neonates, various interventions have been proposed to help decrease the incidence, such as exclusive use of breast milk or lactobacillus; however, we need to learn to better identify those infants at increased risk for NEC in order to intervene prior to its development.

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METHYL FARNESOATE REGULATION DURING REPRODUCTION OF THE TADPOLE SHRIMP, TRIOPS LONGICAUDATUS

The putative hormone, methyl farnesoate (MF), appears to have multiple functions in members of Crustacea. MF research in crustaceans is based on the well studied juvenile hormone model in insects. First, MF appears to promote juvenile morphology, with low MF levels being necessary for larval development (Abdu et al., 1998). Second, MF appears to enhance reproduction (Laufer and Biggers, 2001). For our current study, we have used MF degradation by MF esterase (MFE) as an indirect indicator of MF titer. Typically, MFE rate is related to MF titer by an inverse relationship, as seen in insects (Jones and Hammock, 1985). Recently, we have shown that starvation in adults may increase the rate of MF degradation, which can also be found in insect studies (Rankin and Riddiford, 1977). We did not determine the reproductive output in terms of cyst production at this time. The purpose of this experiment is to determine the rate of MF degradation and cyst production simultaneously. Food deprivation will be used to modulate these two factors. It is hypothesized that reproductive output and MF are positively correlated in the tadpole shrimp similar to insects (Riddiford, 2008). Animals will be placed in isolation chambers lined with nylon mesh to control food consumption and collect cysts as they are deposited. The rate of MF degradation will be determined by incubating 3H-MF with tadpole shrimp tissue. Degraded MF will then be separated from intact MF by polar and nonpolar solvents, and counted by a scintillation counter. Young adults (day 7) have a mean MFE rate of 13.9 ± 1.8 (pmol MF/mg protein/min). Day 10 adults have a mean MFE rate of 18.0 ± 1.6. During this time, prolonged food depravation appears to elevate MFE rate to 58.3 ± 2.4, but will return to normal (14.9 ± 3.2) within 1 hour after feeding. Cyst production is also reduced by starvation.

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A KEY TO IDENTIFY MITTEN CRAB MEGALOPAE IN THE SAN FRANCISCO BAY ESTUARY

Light traps are often used to sample marine larvae and can provide measures for relative abundance of larvae between sampling locations. As part of an ongoing study to monitor mitten crab larvae in the San Francisco Bay, light trap and plankton tow samples were analyzed for mitten crab megalopae and zoeae. If megalopae numbers can be shown to correlate with ensuing juvenile mitten crab population numbers, then megalopae light trap sampling may be used as a tool for early detection in invadable bodies of water. In order to implement low cost sampling devices for mitten crab megalopae such as light traps, it is necessary to be able to identify their larvae in collected samples. Thus, the main objective of this work was to develop a means to distinguish mitten crab megalopae from other native and invasive brachyuran megalopae inhabiting the San Francisco Bay Estuary. The minimal amount of mitten crab megalopae found in light trap samples may be linked to the recent decline of mitten crab zoeae in San Pablo Bay. Plankton tow surveys show that E. sinensis zoeae numbers have been declining in recent years. Zoeae abundance peaked in 2003 with a CPUE of 4034.7. In 2006 and 2007, months with peak abundance had a CPUE of 9.8 and 8.1, respectively. In 2008, no mitten zoeae were found in plankton tow surveys.

No adult crabs have been found in otter trawls conducted by the California Department of Fish and Game since 2006. Drops in water temperature are likely responsible for the decline in mitten crab zoeae and subsequent low abundance of E. sinensis megalopae in this region. Like mitten crab population crashes in other countries, our data may show a temporary decline in what is probably a recurring population cycle of extreme abundance followed by rapid decline.

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STUDY ON NEXT GENERATION TECHNOLOGY SYSTEMS AND THEIR DEVELOPMENTS FOR FOOD AND AGRICULTURE

The objective of this research is to study the trends in the technology systems as applied to food and agricultural fields. The food and agriculture industries are in a state of change driven by the cost of operation and maintenance. The change is also driving the need for technology solutions and IT (Information Technology) equipment that can enable the food processing and packaging and agriculture industry to become more lean, agile, and productive. In recent years such compelling pressures as operational flexibility, networked control, and state-of-art-technology regulations, quality control, productivity and last but not the least environmental issues have motivated the industry to search for strategic ways to fulfill factory wide automation, control and management requirements. As an instance, for automation and control solutions several fieldbus systems conforming to different standers are in use since a decade. It can be noted that that a dedicated fieldbus for food and agriculture industry does not exist. As such, there is a requirement to provide an informational document that can help find the clue in selecting the appropriate fieldbus systems for such applications. This is just one example. Considering food and agricultural industry as a whole this research deals with gathering and documentation of relevant technology related information while focusing on the next generation technology systems and their developments. Further, because, new processing plants small to large including renovation and modernization sites are emerging in order to restore the economy, there is a pressing need to provide appropriate information in response to wide range of available technology which can cater the need of demanding automation and management requirements. Bearing in mind that California has approximately 3300 of food industries, with 79,000 farms, and 240 commodities and trade associations, the importance of this data is significant.

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THE OXYGENATION AND OXIDATION OF Bis(o-ethyl-L-cysteinato) Nickel(II): A STUDY OF TOXICITY TO ZINC FINGERS

Zinc fingers are small proteins found in the body and serve in the transcription of DNA and RNA, controlled cell death, cell proliferation and cell signaling. The zinc serves a structural role, meaning that its function it to create a loop in the protein. The zinc in zinc fingers is often ligated by two nitrogens from histidine and two thiolate sulfurs from cysteine.

Both zinc and nickel are found in the body; however, only zinc has known physiological roles. Nickel, in contrast, is a common skin allergen and carcinogen. ZnN2S2 containing model studies by Golden and coworkers have shown that nickel easily displaces zinc. Oxidative damage to the nickel replaced zinc finger is one process that can stop the transcription of

RNA and DNA and in turn cause cancerous growth. Bis(o-ethyl-L-cysteinato)Nickel (II), Ni(cysE)2, is a representation of the nickel transmetallated zinc finger. UV-vis studies show absorptions of light by Ni(cysE)2 at 489 nm, 384 nm, and 408 nm. These peaks indicate both oxidation (loss of electrons) and addition of oxygens to the sulfurs of the compound.

Oxygenation and oxidation appears on the thiolate sulfers of the cysteine ligand. IR studies show the characteristic bands of metallosulfones (di-substituted sulfurs) and metallosulfoxides (mono-substituted sulfurs) at 1210 cm-1, 1010 cm-1, 950 cm-1, and 910 cm-1.

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PROTEOMIC EVALUATION OF PESTICIDE-RESISTANT BREAST CANCER CELL LINES

There is considerable evidence linking cumulative and sustained exposure to estrogens as a key promoter of breast tumor proliferation. Chemicals with estrogenic activity can bind to the estrogen receptor (ER) to affect downstream signaling of estrogen-responsive genes. Organochlorines are a class of chemical pesticides that can act as xenoestrogens to disrupt normal endocrine function. Methoxychlor and Toxaphene are two organochlorine pesticides that have been widely used in California. Statistical data suggest that past use of these pesticides shows a positive association with age-adjusted incidence of breast cancer in Hispanic women in Central California counties. This study investigates the link between these pesticides and molecular mechanisms of breast cancer by examining the hypothesis that Methoxychlor and Toxaphene exposure induce differential molecular pathways in a cell culture model utilizing cell lines that are either ER positive (ER+) or ER negative (ER-).

The two breast cancer cell lines, MCF-7 and MDA-MB-231, were used as a model for evaluating the differences of the cell lines in response to treatment with Methoxychlor and Toxaphene. Cytotoxicity studies were performed and demonstrated that the sensitivities of two cell lines to the pesticides are different. The MCF-7 cell line (ER+) was more sensitive to both pesticides supporting the premise that organochlorines may be acting as endocrine disruptors.

Furthermore, pesticide-resistant clones of MCF-7 and MDA-MB-231 were established and compared to their sensitive counterparts. We have focused our efforts on the mitochondrial proteome due to its role in cellular detoxification and apoptosis. Thus, the mitochondrial proteome of pesticide-resistant cells was compared to that of non-resistant control cells. We report here the positive identification of several differentially expressed proteins. These results provide a basis for understanding specific pesticide-induced molecular mechanisms and their possible relationship to ER+ and ER- breast cancer.

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SYNTHESIS AND CHARACTERIZATION OF Ni(bis(O-ethyl-L-cysteinato))

Our research group is doing work to investigate the transmetalation of the zinc metal center with a nickel atom in zinc finger molecules and its impact on the protein function. Zinc fingers are organometallic proteins with a finger-like chain of amino acids that interacts with certain base pair sequences and among other things assist in the repair of DNA. Free metal cations exist in the body naturally or can be easily introduced so the study of their impact on proteins is highly relevant.

Due to the complexity of a zinc finger molecule, a similarly coordinated model compound (bis(O-ethyl-L-cysteinato)Zn(II) , Zn(cysE)2) will be used because it retains the immediate coordination sphere around the metal atom center (N2S2) while being easier to study in the inorganic chemistry laboratory.

My individual project involves a molecular synthesis of a trimetallic compound Ni(II)(bis(O-ethyl-L-cysteinato)Ni(II)), Ni(Ni(cysE)2)2. In this case, a Ni atom has already replaced the Zn metal center from the model compound. In the proposed synthesis reaction, two of these monomers Ni(cysE)2 will combine with a free nickel to create the trimetallic molecule in a two to one mole ratio.

Preliminary work has been done to create the molecule in a similar fashion to the synthesis on the Ni(cysE)2 compound, where Ni cations were added to a solution containing excess ligand (in this case the complete Ni(cysE)2 compound).

Analysis by UV-Vis spectroscopy of the isolated crystals showed peaks in the desired locations (410nm and 495nm) however there were extra peaks near 300nm indicating byproducts.

Three avenues will be explored to improve the synthesis. First negative counter ions will be added to the reaction mixture in order to help direct the formation of the desired product. If this is unsuccessful, an ion exchange chromatography column will be used to separate the desired product from any byproducts. The third option is to grow crystals, but this option is not preferred because it could take a long time.

Characterization of the composition and structure by X-ray crystallography, ESI NMR, and elemental analysis will give a concise picture of the molecule. These results will be used as a basis of comparison in related projects in the study of the zinc finger model compound within the research group.

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DIPTERAN SPECIES RICHNESS AND ABUNDANCE ON RE-VEGETATED AGRICULTURAL LAND

The Endangered Species Recovery Program is supervising land restoration in southwest Fresno County through the federally funded Land Retirement Project. The reclaimed land is adjacent to currently farmed land, and there is grower concern that native vegetation on the reclaimed land will function as a reservoir for insect pest infestation. The purpose of my research is to conduct an initial inventory of diptera present on some of the California native plants that are utilized in habitat restoration by the Endangered Species Recovery Program in southwest Fresno County. This research will provide preliminary information on the trophic guild structure of the Diptera within this community and the potential amount of ecological redundancy present within this ecosystem. It will also provide baseline data for future research.

Samples were taken from three herbaceous annuals (Helianthus annuus, Heliotropium currassavicum, and Wislezenia refracta) grown within the Endangered Species Recovery Program's nursery near Tranquillity, California. Comparison samples were also taken within Fresno County in the general area surrounding Tranquillity. Collections were made using an insect sweep net and an insect suction sampler between May and September of 2004 and 2005. All diptera collected were keyed to genus and placed within a voucher collection at California State University, Fresno. Statistical analysis has been done to determine differences between the sites.

There was significant difference in pest status due to host plant, collection method, month and year of collection, and climate variables. Although there was no significant difference on month or year in collection of genera, there was significant difference in Family collected. No significant difference was found between collection sites in taxa collected, niche, number of diptera collected, and pest status. Consequently, prevalence of pest species is due more to host plant and environmental variables than location.

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INSECTICIDE RESISTANCE AND THE EFFICACY OF GROUND ULV APPLICATIONS IN FRESNO COUNTY, CA

During July – September, 2009, ground ultra low volume (ULV) applications of various, registered mosquito adulticide formulations were evaluated in a field assay against wild populations and an insecticide-susceptible, laboratory colony of Culex pipiens sensu lato. Initial applications with piperonyl butoxide (PBO) synergized formulations of natural pyrethrins and selected, synthetic pyrethroids indicated that the wild populations in question had varying degrees of resistance to these products. Laboratory bottle-bioassay testing confirmed these observations.

Adult female surveillance using carbon dioxide baited CDC traps and bermuda grass infusion gravid traps were also utilized to quantify population impacts of ground ULV applications. There was no significant difference in pre and post treatment collections made at sites throughout the treatment area. Surveillance collections further supported the assumption of resistance and a lack of measurable control.

A combination of malathion (Fyfanon®) and natural pyrethrins, synergized at 10:1 with PBO, had significant resistance-breaking properties. Previous studies indicated that resistance to pyrethrins/pyrethroids is likely to come at a cost to resistance of organophosphates (malathion) and vice versa. Further tests with the combination showed that within urban neighborhoods the average mortality of caged, wild mosquitoes was no more than 57% over a 300 ft. swath (one city block distance). In rural sites within mature cornfields and fruit tree orchards, average sentinel, wild mosquito mortalities of 26% and 33% over 300 ft. swaths, respectively, were achieved.

This study demonstrates the existence of significant pesticide resistance in wild Cx. pipiens s. l. populations in Fresno County; as well as the impact of barriers in urban and vegetated rural environments on drift, effective swath and reduced efficacy of ground ULV applications. It also further illustrates the need for new adulticide formulations and product chemistries.

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DISPARITIES IN CANCER SURVIVAL WITHIN THE SOUTH ASIAN POPULATION OF THE UNITED STATES, 2000-2006

The South Asian (SA) population in the United States is believed to be a 'model minority' as regards health status, and few cancer survival studies have been conducted in this population and none have reported an overall cancer survival picture.

We evaluated cancer survival in California SAs and compared this to SAs in the rest of U.S, because California SAs differ demographically from SAs outside of California. Using cancer patient data from the National Cancer Institute's

Surveillance, Epidemiology and End Results program, for the years 2000-2006, we evaluated relative survival and stage at diagnosis in California SA, SA outside of California and for non-Hispanic Whites (NHW) in California. Except for oral cancers, California SA fared worse for cancer survival as compared to non-California SA. Survival for lung & bronchus cancer, uterine corpus cancer, and urinary bladder cancer was significantly worse in California SA in comparison to non-California SA. California SA women fared worse than California NHW females for all gender specific cancers. Late stage of diagnosis was consistently found more frequently in California SAs compared to non-California SA. Therefore, the belief that SAs in the U.S. experience better cancer survival compared to other races in the U.S. is not supported in this analysis.

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RENEGOTIATING THE RACIALIZED CLASSROOM SPACE: RACE AS PRESENCE

Speaker 1, a Chicana female, discusses the FYW classroom as racialized "enclosures," constructed of bodies with (over)determined outcomes and engagements. According to Prendergast (1998), race is an "absent presence" in composition studies and classrooms; however, by considering the ways bodies create racial enclosures in the classroom, this presentation shows how race can be made present and seen. Using Raymond Williams (1973) who defines "enclosures" as areas created through capitalist production that result in the separation of people, enclosures are areas that organize, shape, and construct certain elements and/or human outcomes. Racialized enclosures, manage difference, which then can often impose silence in racialized ways. This presentation retheorizes Williams' idea to invent a new concept, racialized enclosures, useful for understanding the writing classroom as a set of racialized geographic spaces that may reproduce particular social relations, kinds of engagement, or learning outcomes. The purpose of this presentation is to offer one way to theorize the classroom as a set of racial enclosures that affect pedagogy and learning. Additionally, the speaker will offer one example lesson used in a FYW course that attempts to address and renegotiate the racial enclosures of the class.

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THE EFFECTS OF CORTISOL ON THE HORMONAL REGULATION OF APPETITE IN THE TILAPIA

In response to a stressor, an animal's physiology is altered to maintain balance, or homeostasis. Cortisol mediates the stress response by coordinating a set of physiological changes, allowing an animal to restore homeostasis after a stressful event. In fish, an often overlooked consequence of stress is a reduction of food intake. Food intake has been shown to be stimulated by the stomach hormone ghrelin, whose actions are mediated by neuropeptide Y (NPY) in the hypothalamus..

To date our understanding of the role of cortisol in regulating food intake in fish is minimal. This study investigated the short-term effects of cortisol on the hormonal regulation of appetite in the tilapia (Oreochromis mossambicus).

Animals were given a single intraperitoneal injection of cortisol, cortisol + RU-486 (a pharmacological agent that blocks cortisol's action), or vehicle only (control). Tissue and blood samples were collected at 24 h post-injection. Brains were divided into two sections, the frontal region (telencephalon), and the central region (diencephalon), which contains the hypothalamus; the feeding center of the brain. mRNA levels of ghrelin, as well as each ghrelin receptor isoform (GHS-R1a and -1b), and neuropeptide Y (NPY), were measured from brain. Plasma ghrelin levels were also measured. Plasma ghrelin, as well as ghrelin, NPY, and GHS-R 1b mRNA levels were suppressed by cortisol in the telencephalon.

Treatment with RU-486 blocked the observed cortisol effects. GHS-R 1a was not affected by any treatment. However in the diencephalon, ghrelin mRNA was unchanged by cortisol, but increased by RU-486, NPY and GHS-R1a were suppressed by cortisol and remained suppressed in response to RU-486, and GHS-R 1b was not affected by any treatment. These results suggest that acute cortisol treatment – simulating a stressful event – suppresses the endocrine signal, ghrelin, and may suppress its downstream effects on appetite.

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THE EFFECTS OF VERBAL ABUSE ON ADOLESCENT MALES: AN ATTACHMENT THEORY PERSPECTIVE

Recently there has been attention given to the study of neglect, physical, sexual and to a lesser extent emotional child abuse in the United States and abroad. The current study considers verbal abuse from an Attachment Theory framework.

Attachment theory states that the way in which initial attachments are completed establishes and strongly influences all future relationships (Bowlby, 1969). There is growing evidence that the pattern of attachment that an individual develops during the years of infancy, childhood, and adolescence is strongly influenced by the way his parent or primary caregiver treats her or him (Bowlby, 1988).

In total 153 late adolescent males from non-clinical settings such as sport teams and church groups throughout Northern California participated in the study. Participants were asked to complete a series of questionnaires.

The first hypothesis; males who experienced verbal abuse from mom, dad, or a primary caregiver during childhood or adolescence will have less secure adult attachments than males who did not experience verbal abuse, was found to be statistically significant. The second hypothesis, that individuals who experienced parental verbal abuse would have higher current levels of loneliness, shame, depression, and suicidal ideation was partially supported. Participants that reported parental verbal abuse from mom only or both mom and dad, had significantly higher levels of loneliness, shame, and depression than those that did not report any parental verbal abuse. Contrary to the hypothesis those who only experienced verbal abuse from dad did not show increases in any of these variables. Participants with no history of parental verbal abuse had fewer reported suicide attempts compared to participants that experienced verbal abuse.

Overall, the findings support the recent literature on parental verbal abuse. This under studied form of abuse has strong and lasting impacts.

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EVALUATING THE EFFECTS OF THE kNOw MORE PEER-EDUCATION PROGRAM ON RELATIONSHIP ABUSE

With the issue of domestic abuse on the rise and funding to battle the problem dwindling, peer-education projects like kNOw More (Know Your Limits – No Abuse) have become increasingly important. The kNOw More program, based in Fresno, CA, trains peer-educators to deliver emotional presentations about teen relationship abuse to students in their high schools. The current research evaluates two separate aspects of the program: 1) its effectiveness in raising awareness of relationship abuse and its influence on counseling self-efficacy among peer-educators and 2) its effectiveness in raising teenagers' awareness of relationship abuse and their knowledge of how to get help.

For the first evaluation, high school students accepted as kNOw More peer-educators for the 2009/2010 school year were recruited. Approximately 100 students attended the 2-day, 24-hour peer-educator training camp and were offered pre- and post-training surveys. Eighty-three peer-educators (51 females and 32 males aged 13 to 18) completed both the pre- and post-measures. The second evaluation analyzes archival data collected by kNOw More in the 2008/2009 school year.

More than 5,000 students are represented in this anonymous data, which comes from 16 high schools and one intermediate school in Fresno County.

Results of the first evaluation, which was analyzed with dependent-samples t-tests, indicate that kNOw More peer-educator training significantly increased peer-educators' awareness of relationship abuse and counseling self-efficacy. Evaluation two, a descriptive analysis of pre- and post-presentation data, indicated that the kNOw More presentation increased students' awareness of relationship abuse as well as their knowledge of how to get help.

Results suggest that peer-education programs like kNOw More may be a viable first step in raising awareness about relationship abuse and thus preventing it. Discussion will include promoting these kinds of programs in schools.

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THE REAL EXCHANGE RATE AND THE CURRENT ACCOUNT

This paper investigates the joint dynamic response of the current account and the real exchange rate to permanent and temporary shocks using structural VAR models for seven developed and five developing countries. Due to the ambiguity of the unit roots test, model specification based on both stationary and nonstationary current accounts are employed. Capital flows are also included to capture external shocks as well as potential structural breaks due to financial liberalization.

We find that the differences between the results when current account is modeled as stationary and nonstationary are non-trivial. Current account is mainly driven by temporary shocks such as monetary shocks or disturbances while real exchangerates fluctuations are dominated by permanent shocks.

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MULTIRESOLUTION TECHNIQUE BASED ALGORITHM FOR SENSOR FAULT DETECTION AND ISOLATION

One of the important research domains of the industrial systems is the automation and control. The next generation automation and control systems demands sophisticated condition monitoring strategy in order to achieve higher reliability.

The qualitative and quantitative indices of reliability have been studied and reported. The recent developments in soft-computing methods and tools and their implementation scenarios have also led to establishing a stronger foundation for smarter systems. The condition monitoring approaches are now being extended through the application of new theories, techniques, tools, and methods. The objective of this research is to study a new condition monitoring strategy in terms of

Fault Detection and Isolation (FDI) scheme for a class of sensor systems used in automation and control solutions for industrial systems. The objective was set taking into account of the fact that the research and development activities in this field is not much. This research is directed to study an appropriate scheme for FDI of a typical sensor. The work also presents a comprehensive study on other FDI approaches. FDI scheme is developed for simple transducers which are widely used. Because, it is now possible to incorporate processing power at the sensor level with the rapid developments in embedded technology for improved programmability and flexibility, the use of PC, computing language and DSP platforms play important role in this work. The proposed FDI approach is based on multiresolution decomposition technique. In order to develop FDI algorithm, appropriate methodology and supporting tools such as MATLAB, DSP (Digital Signal Processor) technology, PC platforms, and GUI-based programming tools are used. These tools and systems are chosen because of their powerful architectural advantages, low-cost features, and compatibility. In summary, the work embodies literature review, methodology, formulation, framework, results, discussions, conclusions, and future directions.

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6-OXOVERDAZYL REACTIVITY WITH PREOXIDES

Verdazyls are stable radicals that can be synthesized with a variety of substituents at the 1, 3, and 5 positions. The stability of these verdazyls depends on different substituents. Substituents contribute to verdazyl stability by providing steric bulk, resonance delocalization, and lone-pair repulsion to suppress its reactivity. There are two types of verdazyls differentiated by the substituents at the sixth position of the ring. The first type has a sp3 carbon at the sixth position.

This type also has a half boat conformation. The second type has either a carbonyl or thiocarbonyl group at the sixth position, and also has a planar geometry. There have been many studies on verdazyl chemistry, but little is known about their reactivity or about compounds that can alter the ring constituents of the verdazyl. In order to better utilize these radicals in applications such as spin probes for biomolecules, and catalysts for radical polymerization, we investigate their reactivity towards a variety of peroxides. In particular, we report the reaction of 1,5-diisopropyl-3-phenyl-6-oxo-verdazyl with t-butyl hydroperoxide in two different solvents: benezene, and tetrahydrofuran (THF). In addition, we report the reactions of 1,5-diisopropyl-3-phenyl-6-oxo-verdazyl with variety of peroxides such as dimethyl dioxirane, azobisisobutyronitrile (AIBN), and m-chloroperoxybenzoic acid (mcpba). The reactions were investigated by UV-vis, NMR, and GCMS to determine the kinetics and products of the reactions. Reaction kinetics shows auto-catalysis under conditions of excess peroxide. Possible mechanisms of reaction will be discussed.

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THE EFFECTS OF FASTING AND RE-FEEDING ON THE NEUROENDOCRINE CONTROL OF APPETITE IN TILAPIA, Oreochromis mossambicus

Appetite is coordinated primarily in the hypothalamus which integrates orexigenic and anorexigenic signals from the brain and peripheral signals (i.e. metabolic and hormonal). Ghrelin a novel gut peptide – stimulates appetite in both mammals and fish: its orexigenic actions are mediated by stimulating neuropeptide Y (NPY)-containing neurons in the hypothalamus.

Lack of adequate food resources is a constant environmental challenge faced by fish. In spite of this knowledge, our understanding of the hormonal control of appetite during fasting and re-feeding in fish is limited. The current study investigated the effect of fasting and re-feeding on the neuroendocrine control of appetite in the tilapia (Oreochromis mossambicus). Tilapias were subjected to three treatments: fasting for 30 days; fasting for 21 days and re-fed for 9 days; and fed for 30 days (control). Fasting resulted in a significant reduction in growth. Re-feeding reversed the negative effects of fasting on growth. Brain ghrelin mRNA levels were significantly reduced by fasting. Re-feeding for 9 days elevated brain ghrelin mRNA levels, but these levels were not significantly different from either control or fasted fish. Fasting for 30 days did not alter brain mRNA levels of NPY or the ghrelin receptor (GHS-R1a). These data suggest that tilapias are well adapted to a 30 day fast, since NPY mRNA levels (possibly NPY activity) were unaltered by a 30 day fast. Further, our data suggest that brain derived ghrelin may be functioning as a metabolic signal and not as an orexigen. This work was supported by the NSF (IOS-0639771) awarded to LGR.

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ANTIBIOTIC FUNGI AND PROTEINS IN THE DIET OF SMALL PRIMATES OF PANAMA

Tamarins in rainforest canopies of Panama were studied in an effort to understand specific qualities of a small primate's diet in regards to small organisms residing in or on consumed foods.

Tamarins were studied on Isla Barro Colorado and Aqua Clara Bay, Panama Canal Zone, in 2008. Samples of foods consumed by these small monkeys were examined microscopically, and some of the organisms found growing on or in these foods were grown on various nutrient agars.

Tamarins consumed a broad range of foods, which included large insects, fruits, figs inhabited by populations of tiny larvae, and fruits coated with or infested with filamentous fungi that retarded the growth of some bacteria in petri plates.

Generalized description of a small primate's diet in the wild, as found in much of the literature on tamarin monkeys, does not appear to address the potential for a highly selective microbial foraging strategy. Along with their search for staple food items, tamarins may also selectively forage on foods contaminated with small organisms that are sources of trace proteins and antiobiotic compounds.

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THE LEVYING OF TWO MATTHEWS: DISCOURSE AND SYMBOLISM

Choreographer Matthew Bourne's version of the ballet Swan Lake made its American debut in 1998, two days after the murder of Matthew Shepard, a gay man from Laramie, Wyoming. At the same time that national news outlets and political protests martyred and vilified Shepard, the media coverage about Swan Lake centered around Bourne's nontraditional casting of men in the roles of the swans. The extremely emotional and polarizing public debate about Shepard contrasted with the intellectualized and carefully constructed public conversation about Bourne's ballet. This revised version of Swan Lake includes a prince and male swan dancing together and mirroring a traditionally romantic storyline, and as a result the reviews of the production focused on the homoerotic themes and debated whether it ought to be interpreted as a "gay" ballet. At the time of Bourne's Swan Lake's premiere and Shepard's death, mainstream audiences in the U.S.had already been introduced to homosexual themes in the arts. Even though the cultural acceptance of homosexuality had the potential to increase across the country, other anti-gay movements and groups challenged the progress that gay rights was making. This paper examines the reviews of Bourne's Swan Lake and the contemporaneous discourse surrounding the brutal crime committed against Shepard. The public dialogue about each of these two events, with themes of homosexuality and personhood, unfolded in very different ways. The artistic medium of ballet allowed a provocative conversation about

Bourne's dance which was both related to and distanced from the emotionally charged discourse surrounding Matthew Shepard's murder. This paper contends that the arts' ability to open up nuanced and provocative public conversations about political issues promotes and enables a kind of cultural change that is distinct from that created by debates sparked bycurrent events and the news media.

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BEHAVIORAL PREDICTIONS OF WOMEN INMATES: THE UNFORTUNATE EFFECT OF LOW FACIAL PROMINENCE

Are predictions of prison inmate behavior influenced by facial prominence and the type of crime one commits? Research shows that facial prominence, gender, and perceived occupation interact and influence prospective job applicants' occupational fitness. Previous research has defined occupations on an intellectual-physical continuum, but what about crimes that follow the same continuum? In this study, students judged hypothetically convicted criminals portrayed with differing levels of facial prominence. Results suggest that people who commit a physical crime, as opposed to a crime of intellect, are predicted to exhibit more negative behavior while incarcerated, and increasingly so for women who are depicted with low facial prominence. Here, students completed a judgment task that examined whether differing levels of facial prominence paired with different types of crimes would influence thought about behavior while incarcerated. Results suggest that an incongruence between crime physicality and facial prominence leads to higher predicted levels of negative prison-related behaviors, but not positive prison-related behaviors, for women, but not for men. When crime information (e.g. a brief description of a crime) is paired with a picture of a hypothetical inmate (i.e. either high or low facial prominence), facial-framing influences predicted prison-related behavior differently across inmate gender, regardless of rater gender. These results suggest that an incongruence between the committed crime's physicality and facial prominence leads to higher levels of predicted negative prison-related behaviors for women but not for men. Future research will explore to what degree raters' judgment of crime "physicality" influence these types of behavior predictions.

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THE EFFECTS OF A GLUTAMATE AGONIST, L-BMAA, ON MOTOR-MOVEMENTS OF ADULT FRUIT FLIES

Beta-N-methylamino-L-alanine (L-BMAA) is an environmental neurotoxin that is potentially a glutamate agonist. L-glutamate is considered to be a major neurotransmitter of the neuromuscular junction and the neuromodulator in the central complex of the central pattern generator of insects. L-BMAA is suspected to cause neurotoxic effects on the motor output regions. To further understand the neurotoxic effects of this glutamate agonist, we subjected adult fruit flies to the neurotoxin and quantified their locomotor behaviors and their geotactive movements. The fruit flies were fed three different concentrations of L-BMAA for four consecutive days. For the experiment, the flies were transferred to a walking arena with a concave floor and a flat ceiling and filmed for 10 minutes each day. We observed that flies treated with the two lowest dosages spent more time walking. The treated flies did not walk more often; however, their walking bouts were longer than the control flies. Fruit flies are negatively geotactive, which means they move up and away from the center of the earth. Compared to the control, fruit flies treated with L-BMAA showed a dosage-dependent decrease in the ability to climb up a slope and onto the ceiling of the walking arena. At the highest concentration of the neurotoxin, the flies showed severe motor disability. These flies walked less than the control flies, tremors were also a distinctive feature, and they lacked the ability to stand or right themselves after a fall.

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MECHANISM OF THE REACTION OF PROPYLENE OXIDE WITH CHLORINE ATOMS

Propylene oxide (PPO) is a pesticide that has been proposed as a potential alternative for some of the current applications of methyl bromide, which is now banned because of its impact on the ozone layer. However, the effect of its use on regional air quality is not known because its atmospheric chemistry has not been studied. In this study, the chemical pathways via which PPO is degraded in the atmosphere have been investigated.

Experiments were carried out in a 142 L Teflon-lined smog chamber. Gas phase reactants were introduced into the reactor, and chemical reactions were initiated with ultraviolet (UV) light using internally mounted black light lamps. The chemical composition of the reactor was investigated by Fourier Transform Infra-Red (FTIR) spectroscopy. Chlorine atoms were used to initiate the chemical degradation of PPO. Additional experiments were carried out with methyl acetate since the atmospheric chemistry of this species is expected to be similar.

Acetic acid, acetic formic anhydride (AFAN), carbon monoxide (CO) and formic acid are the major reaction products from both the Cl + PPO and the Cl + methyl acetate reactions. Measured product yields are YAcetic Acid = 0.18, YCO = 0.2, YFormic Acid = 0.25 and YAFAN = 0.4 for methyl acetate, and YAcetic Acid = 0.38, YCO = 0.5, and YAFAN = 0.72 for PPO. The measurements are consistent with H-atom abstraction from the secondary carbon of PPO as the major reaction pathway for this species. The atmospheric implications of these measurements will be discussed.

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CANINE HEARTWORM (Dirofilaria immitis) IN FRESNO AND MADERA COUNTIES, CA: PREVALENCE DIFFERENCES BETWEEN FOOTHILL AND VALLEY FLOOR HABITATS

The purpose of this study was to evaluate presence of heartworm antigen in domestic dogs in Madera and, for the first time, Fresno counties and test for the effects of habitat and other environmental variables on prevalence. Dogs were screened for heartworm via PetChek® ELISA from blood samples (N= 519) collected at seven sites during April-July 2009. Eighteen dogs were heartworm antigen positive. Pearson Chi-square analyses were run on the presence of heartworm versus the following variables: elevation range, percentage of time spent outdoors during the day, percentage of time spent outdoors during the night, pet coat length, weight class, prevention status, and sex. Dogs that spent at least 50% of their time outdoors during the day were significantly more likely to have heartworm that those who spent less time outside ($N = 519$, $df = 1$, $p = 0.031$). Overall prevalence (3.47%) was lower than expected with Madera County having 3.8% positive samples and Fresno County 3.5%; this prevalence is lower than many previous studies. The effect of time spent outdoors on heartworm prevalence was similar to previous studies. The effect of elevation, though not significant, requires further investigation, as does the prevalence of larval stages in mosquitoes.

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FACTORS INFLUENCING THE MATRICULATION DECISIONS OF APPLICANTS TO THE JORDAN COLLEGE OF AGRICULTURAL SCIENCES AND TECHNOLOGY AT CALIFORNIA STATE UNIVERSITY, FRESNO

The purpose of this study was to examine recruitment efforts as they affect the decision-making processes of students entering the Jordan College of Agricultural Sciences and Technology at California State University, Fresno and those students who choose not to attend the university. The target population for this descriptive census study consisted of all applicants who were admitted to the college for the fall 2008 semester (N = 963).

Data were collected through a questionnaire consisting of 74 items administered online and participation was requested via email to all students in the population. A total of 171 usable instruments were received, resulting in a response rate of 18%.

Non-response error was controlled for by comparing early and late respondents on variables selected prior to data collection.

When examining recruitment practices, both groups reported the most useful sources of information to be personal contact with faculty, visits to campus, and website information. Notable differences were found between groups in the use of particular information sources. Personal conversations with faculty were used by 63% of students who chose to attend the university while only 23% of those who chose otherwise. On campus student events, such as FFA and 4-H events were used by 53% of the matriculant group compared to 38% of non-matriculants. University and departmental websites were used by at least two thirds of students in each group and were reported to be some of the most useful sources of information.

Findings suggest that web-based information is critically important to prospective students. Furthermore, results show the importance of the college's support of on-campus outreach events as these activities showcase the college's programs and facilities and allow faculty to interact with prospective students and their parents or guardians, which were found to be the most influential people in students' college decision making process.

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DECISION-MAKING IN A CONFIDENCE-BASED GAMBLING TASK

The developing field of behavioral economics has attempted to reconcile economic and psychological theories of human decision-making behavior under conditions of risk or uncertainty. Previous research has indicated that when presented with fundamentally equivalent decision-making situations differing only in how they are framed, people tend to make greater risky-decisions when losing than when gaining reinforcement such as points or money. The primary objective of this study was to test this "framing effect" in a simple decision-making task based on an individual's perception, memory and confidence.

Participants were divided into three groups: 1. Gain only (n=43), 2. Loss only (n=45), and 3. Both gain and loss (n=47). Individuals completed a computer-based perception task with the objective of maximizing earned points. Each trial consisted of a delayed-matching-to-sample task (DMTS), followed by a rate of confidence and finally an opportunity to risk or play-it-safe to gain or lose points. Results showed a strong framing effect -- participants in the loss group risked significantly more when compared to participants in the gain group. Also, in the combined gain/loss group, participants risked more on loss trials than gain trials. In addition, there was also a framing effect for confidence; that is, individuals were more confident in accuracy on the DMTS task when they lost points on each trial. This confidence framing effect has not yet been measured in contemporary behavioral economics literature.

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CULTURAL INTERPRETATIONS OF LONDON: A PANEL OF ETHNOGRAPHIES FROM ACROSS THE POND

For over twenty-five years, the College of Arts & Humanities has offered "London Semester" to students' campus-wide. InSpring 2009, these four undergraduate researchers participated in London Semester and enrolled in the course "Cultural Interpretations of London." This course, taught by Dr. Moreman, required them to do ethnographic fieldwork within a London context for the purposes of understanding more about London culture and in turn learning more about themselves.

Coming from a wide array of majors (Political Science, Art, Business and Interior Design), they individually approached the study of their site with different tool sets, different interests and, of course, different outcomes. However, with ethnography as their methodology, they all sought the same goal: to understand how culture is created and maintained in everyday life by focusing on people communicatively enact and resist societal norms and expectations. The following panel is composed of four studies that individually offer interesting insight into London. However, when the four presentations are heard across one another, they also offer interesting and important insight into everyday life both here and afar.

Panelist #1: Kaelyn Rodriguez
Art major, "The Evolution of Walls: London Graffiti on the South Bank."

Panelist #2: Jennifer Zenovich,
Political Science major, "Homeless Bound: The Mystery of the Homeless in London"

Panelist #3: Paw Vue
Interior Design major, "London Karaoke: The Freedom to be Weird"

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INTERROGATION OF EVIL: HUMAN FAULT IN UNDERSTANDING NATURAL FORCES

The purpose of this paper is to arrive at an original solution to the 'problem of Evil' through way of comparing previous works by Western and Eastern philosophy with an original theory. I first question the contemporary view of Evil and the problems with this interpretation, noting that it is superficial. I then define Evil as a subjective value determined by human imagination and argue the objectivity of Evil. I argue Evil is not objective but is a manifestation of the human imagination in order to understand and accept malicious events.

To support my claim, I probe two philosophical interrogations and a Hindu mythological account on Evil. I explore the sublation of Evil and its determination by finitude and infinitude as described by Hegel. Following a more contemporary analysis, I review Badiou's novelty of the idea of Truths and the obstruction of, which is determined Evil. Through an analysis of Hindu mythology, Evil and Good are coeternally equal, and one's dharma, varying on different levels, can be either Good, Evil, or both.

Given the results of my interrogation of Evil, I find the arguments presented by Hegel, Badiou, and Hindu mythology to be relatively similar. These philosophies state that it is necessary to diverge from the Good, Infinite, or Truths in order to aspire to the Good, Infinite, or Truths. Moreover, seeing the necessity to sever oneself from the Good, I come to the conclusion Evil is a value manifested by the human imagination acknowledging phenomenal events. It takes an individual to understand what is Good for him, and once discovered, values his conclusion. Evil then is an opposition to him and the Good, another subjective value. Phenomenal events, with the absence human interpretation, I argue, are neither good nor evil until a personal value is superimposed upon them.

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A TAXONOMIC CATEGORIZATION OF MODERN MANUFACTURING PARADIGMS

Companies world over are constantly on the lookout for techniques and practices that will enable them to reduce their operating costs while increasing their market-share thereby generating higher profits. This makes it imperative for them to provide customized products at mass production prices while reducing the design-to-market times and lead times.

There are many techniques available in the research literature today that purport to help companies achieve these often-times contradicting and complex goals. Some of these techniques like lean principles have gained widespread popularity partly fueled by the success story of companies that pioneered them, Toyota for one. However, others like mass customization and agile manufacturing have not yet taken off as well as they should have been. The reasons for this laggard response might be partly due to the lack of understanding of the underlying fundamentals and partly due to the inability to keep up prolific rate at which newer concepts are being brought to fruition.

This work provides a taxonomic categorization of these various paradigms vis-a-vis objectives such as responsiveness, customization, quality, wastes etc. It is envisioned that this would help companies identify specific techniques for their specific objectives as they embark upon this journey of achieving higher profitability through reduced costs and improved customer satisfaction.

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AN EVALUATION OF THE EFFICACY OF SUPPLEMENTAL INSTRUCTION AT FRESNO CITY COLLEGE

Data reveals that community college enrollment in the United States has increased by 743 percent since 1963. In California, which is home to the largest community college system in the world, approximately 1.4 million students are enrolled at 111 institutions. Fresno City College was established in 1910 and is the founding institution of the California Community College system. Evidence reveals 50% of all students who enter various levels of postsecondary education fail to complete a bachelor's degree within six years. Enrollment projections of postsecondary institutions to 2017 reveal substantial increases in student enrollment across racial, age and socioeconomic demographics. If attrition rates continue on the same path postsecondary institutions and the students they serve may experience severe consequences.

The purpose of this project is to evaluate the impact of Supplemental Instruction (SI), a student academic enhancement program, designed to increase student retention, and grade-point averages, leading to increased graduation rates of Fresno City College students. The research question that served to guide this project is: What impact does Supplemental Instruction have on the retention, successful completion and grade-point average of Sociology 1A students at Fresno City College? This evaluation includes final course grades for eight sections of introductory sociology from spring 2008 to spring 2009. The total number of students in the study was 703 of which 520 were offered SI services. In addition, baseline data was collected from the SCCCD's Department of Institutional Research to compare the academic performance and retention rates of SI students against all other introductory sociology courses at Fresno City College. Data analysis reveals a positive correlation between SI participation and increased rates of retention, successful completion and grade-point averages. The establishment of Supplemental Instruction as a permanent student support service at Fresno City College is a core component in achieving the educational master plan.

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UNDERSTANDING AND ADDRESSING FACTORS THAT CONTRIBUTE TO INTIMATE PARTNER VIOLENCE AS EXPERIENCED BY LATINAS

The purpose of this project is to understand factors that contribute to Latinas' risk of abuse by intimate partners. A literature review reveals that stressors related to immigration and acculturation, elevated rates of poverty, and distinct cultural beliefs about gender roles serve as significant risk factors. Preliminary findings based on a workshop conducted with preteen Latina girls suggest educational interventions about respect in relationships may play a key role in reducing Latinas' risk of victimization.

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THE EFFECTS ON NONCONTINGENT REINFORCMENT ON RAPPORT BUILDING IN CHILDREN WITH AUTISM

The current study examined the use of noncontingent reinforcement (NCR) and its effect on building rapport in a therapeutic setting for children with autism. Rapport is a concept long thought as essential to therapeutic benefits in clinical settings. Anecdotal information supports the need for good rapport when working with children with autism as well, and may be especially important given the typical social deficits and urgency of improving quickly for children with autism spectrum disorder. The children are enrolled in the Central California Autism Center at California State University, Fresno, a center-based behavioral intervention program. The current study hypothesized that introducing a noncontingent reinforcement procedure in therapy sessions would increase the number of approaches to the therapist and decrease the number of retreats from therapist and problem behaviors. These results, as expected, were greatest during the implementation of Phase C: NCR every 30 seconds. The study utilized an ABACAB/C (or ACABAB/C) design to determine the functional relationship between NCR and rapport. Phase A was baseline. Phase B was the presentation of NCR every minute, and Phase C was the presentation of NCR every 30 seconds. Results of the study suggest that aspects of rapport can be developed through the use of noncontingent reinforcement in a therapeutic setting for children with autism. Data was recorded by the researcher and inter-observer reliability was calculated to be 87% across all participants and was determined with the help of trained research assistants.

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SHORT-INTERVAL TIME PERCEPTION IN AN ODDBALL TASK: AN ERP STUDY}

The study of human time perception has rarely been conducted using modern neuroimaging techniques. In this event-related potential (ERP) study, we investigated short-interval time perception using an oddball task. In this design a participant was shown the same stimulus (the number 10 in a circle) that either remained on the computer screen for 10 sec (80% of trials) or 6.4 sec (20% of trials). After each trial, participants were asked to respond on a touch-pad whether the trial was actually 10 sec or not. We recorded from nine electrode sites and, as in other oddball designs, we found a larger amplitude of the P300 (positive deflection in voltage approximately 300 msec after an event) on the rare 6.4 sec trials compared with the more frequent 10 sec trials. This difference in amplitude indicates a neural representation of temporal discriminability of these intervals; this despite participants showing poor discrimination in their post-trial responses. These results suggest the existence of an internal timing mechanism.

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TOWARDS THE GENERATION OF TRANSGENIC LINES OF Caenorhabditis elegans AND MELOIDOGYNE INCOGNITA USING THE MICROPARTICLE BOMBARDMENT METHOD

Meloidogyne incognita (Mi) is the most widely spread Root-knot-nematode (RKN) in tropical and sub tropical regions. Plant-parasitic nematodes are responsible for major crop losses across the world. The genuses Meloidogyne is specific to root-knot-nematodes and are a group of major plant pathogens. Caenorhabditis elegans (C.elegans) PCD genes might be useful to combat this nematode efficiently. A major obstacle in applying this strategy more broadly is that we know very little about the early development of plant parasitic nematodes in general and about Mi in particular. Our research attempts to address this by developing the foundation for the study of development in Mi as a model for plant parasitic nematodes.

The specific objectives of our research are: 1) to establish transformation protocols for C. elegans using the gene-gun to generate transgenic lines expressing green fluorescent protein (GFP) in different cell lineages; and 2) to develop transformation protocols for Mi using the gene-gun to generate transgenic lines expressing GFP in different cell lineages.

We focus on using gene constructs with promoters driving expression in muscle cells. GFP expressing genes will be used as the markers to create transgenic lines of C.elegans and Mi.

The gene gun has proven to be an efficient tool in generating transgenic species of various organisms and we will use it here to generate transgenic lines of C. elegans. A plasmid with a muscle specific promoter, myo-3 which expresses GFP in the muscle cytoplasm and a plasmid with unc-54 promoter that expresses GFP in the nucleus of the muscle cells are adhered to gold microcarrier particles, 1.0 μm in diameter. Microcarriers are first mixed in a 1:1 ratio with spermidine. 200 μl supercoiled DNA is added to the mixture and Tefzel tubing was used to make cartridges for the gene gun. Cartridges were shot from a distance of 3cm at a helium pressure of 380psi.

Conclusions reached: a transformation protocol for the gene gun was modified to suit requirements for C. elegans transformation in our laboratory; attempts to transform C. elegans with previously described protocols were unsuccessful.

Helium pressure, the distance from which cartridges are shot and number of cartridges to be shot were modified to obtain desired expression. 12-welled culture plates were used to maintain screened worms that expressed GFP. We have successfully generated two transgenic lines of C. elegans expressing GFP in different muscle cell compartments. We are currently attempting to transform Mi.

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IS RASTA MUSIC! AN INVESTIGATION INTO THE INTERCONNECTEDNESS OF RASTAFARI AND REGGAE MUSIC

Reggae music is a multi-million dollar industry, Jamaica's largest cultural export and the most successful evangelical music in the world. Rastafari is a 70 year old belief-system and worldview. Given the tendency to conflate them, it is important to examine their histories to understand the symbiotic nature of their relationship. The purpose of this study is to uncover the interconnectedness between Rastafari and Reggae music, utilizing various literary sources. To do so, this article assumes four objectives; first to review what Rastafari is, some central figures within the movement, and the more salient tenets and rituals within the belief-system. Second, to link Rastafarian musical rituals to the development of Reggae music.

Third, to chronicle the history of Jamaican popular music to arrive at the genesis of Reggae. Last, to explore the influences Rastafari and Reggae music have had on one another. According to the literature review, Reggae music evolved via the intermingling of cultures during the 1930's and more specifically from Rastafarian drumming, worldviews and lyrical themes. Today, Reggae music and Rastafari continue to thrive utilizing the formula employed during the genesis of these movements, all the while inspiring and inviting new generations to "Listen and Overstand" that is to say, listen to the message and understand its meaning.

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THE IMPACT OF THE COLLEGE ASSISTANCE MIGRANT PROGRAM ON MIGRANT STUDENT ACHIEVEMENT IN THE CALIFORNIA STATE UNIVERSITY SYSTEM

The purpose of the study was to analyze the College Assistance Migrant Program (CAMP), a student services intervention, to determine its impact on migrant student achievement in the California State University system. The participants included 336 migrant students who were enrolled as first-time, full-time freshman in fall 2002 from 6 of the 23 CSU campuses with CAMP federal program funding. The comparison groups were Latinos and other students from the general student population for a total of 9,698 student level data records.

The study intended to address one overarching research question: Does the CAMP intervention have an impact on student academic achievement? The Analysis of Variance (ANOVA) and Chi-Square Test of Independence were used to explore differences between CAMP, Latino, and other students from the general population for persistence, first year and cumulative grade point average, and baccalaureate degree attainment.

Findings reported that CAMP was having a positive impact on migrant student participants enrolled in the program. CAMP students were found to have higher persistence, first year grade point average, and cumulative grade point average than the two comparison groups. In addition, CAMP students were found to be performing at the same level of Latino and general population students for baccalaureate degree attainment.

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PROGRESS TOWARD PREPARATION OF Gd and Nd NANOPARTICLES

Magnetic nanoparticles have potential applications in various fields, for example biomedicine and magnetic information storage due to their reduced size and magnetization properties. The focus of our current research is on the synthesis of gadolinium (Gd) and neodymium (Nd) nanoparticles. Our interest in these rare-earth elements is based on the unusual magnetic behavior, such as enhanced magnetization and reduced magnetic ordering temperature that arises at the nanoscale level.

Our motivation for this research is to determine the appropriate procedure to synthesize Gd and Nd nanoparticles. In order to synthesize rare-earth nanoparticles, we use the inverse micelle technique [1], which provides with a coating that protects the formed nanoparticles from aggregation and oxidation. In our current synthesis procedure of Gd and Nd chloride salts, NaBH4 is used as the reducing agent [2]. NaBH4 has been chosen since it does not react with the surfactant didodecyldimethylammonium bromide (DDAB). Another major issue involved with the synthesis is to obtain a clean sample. The liquid-liquid extraction is applied to purify the samples.

The results from the energy dispersive X-ray spectroscopy (EDX) indicate that the current procedure to reduce GdCl3 salt yields Gd. However, the reaction to reduce NdCl3 salt does not take place. Images from the scanning electron microscope (SEM) and light microscope show the formation of submicron Gd clusters. The liquid-liquid extraction has improved the purification of our samples; nevertheless, excess DDAB and by products have been found in our produced material

Further purification of the samples is needed. An alternate synthesis route needs to be found to synthesize Nd nanoparticles.

[1] X.M. Lin, C.M. Sorensen, K.J. Klabunde and G.C. Hadjipanayis. Langmuir. 14, 7140 (1998).

[2] G.N. Glavee, K.J. Klabunde. C.M. Sorensen and G.C. Hadjipanayis. Langmuir. 9, 162 (1993).

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THE GROWTH CHARACTERISTICS OF Dunaliella primolecta and Botryococcus braunii IN FRUIT WASTE WATER AND DEVELOPMENT OF A PROTOCOL TO GENERATE transgenic algae

Microalgae have attracted the attention of many scientists to investigate their potential as a source of biodiesel. Biodiesel are biodegradable, carbon-neutral, non toxic and renewable fuel serving as the best alternative to depleting fossil fuels. Microalgae, the unicellular photosynthetic organisms accumulate oil mainly in the form of triacylglycerol that can be later converted to biodiesel by a trans-esterification reaction. Chlorophycaeae and Bacillariophycaeae are the two known classes of algae that accumulate large amount of oil. However, the increased production costs pose a serious threat to commercialization of the same. In this project we focus on two aspects that might increase oil production: 1) modifying culture conditions to include waste water from the fruit industry; and 2) develop genetic transformation protocols, which could be used to make genetic improvements in oil production.

First we focused on studying the growth characteristics of two species of green algae, Dunaliella primolecta and Botryococcus braunii in fruit industry wastewater. It was found that both species of algae had the capacity to grow in lower concentrations (25 % v. by v.) of fruit industry wastewater when compared to the control cells. The cells entered the log phase in 10-12 days for Botryococcus braunii and 7-9 days for Dunaliella primolecta. The Dunaliella primolecta cells grown in 25 % wastewater also produced oil content slightly higher than the cells grown in normal wastewater. The Botryococcus braunii cells did not show much change in the amount of oil content in different percentages of wastewater.

We also attempted to develop a protocol for transformation of these two species using several methods, including the use of Agrobacterium tumefaciens. To test successful transformation we used the vector pCAMBIA 1301 that harbors the GUS (Beta-glucuronidase) and hygromycin resistance genes. Using Agrobacterium-mediated transformation we obtained Dunaliella primolecta cells that resulted in hygromycin resistance colonies. The developed transformation protocol could belater used to transform the species with specific gene responsible for enhanced lipid production.

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WHEN YOU SEE DEAD PEOPLE: PARANORMAL "SIGHTINGS" AS EYEWITNESS EVENTS

Recent research (Sharps et al., 2006) demonstrated that paranormal and crypto zoological beliefs are facilitated by tendencies toward attention deficit hyperactive disorder (ADHD), dissociation, and depression. These characteristics predicted specific patterns of beliefs in several paranormal phenomena, including ghosts, ESP, astrology, and "cryptids" (unknown animals such as Bigfoot, Yeti, and the Loch Ness Monster). The present research addressed the question of whether these psychological tendencies would tend to create bias in perception as well as belief- in other words, whether a person's identification of a given stimulus item as paranormal in nature would be influenced by the same factors previously demonstrated to influence paranormal beliefs. This was shown to be the case. Ninety-eight college-level respondents were shown a series of digital photographs purported to be of Bigfoot, space aliens, or ghosts, and were asked to rate the prospect that these actually depicted the paranormal entities in question. Tendencies toward ADHD, depression, and dissociation were measured, respectively, by means of the standard Conners Scales, the Beck Depression Inventory-II, and the Dissociative Experiences Scale. Tendencies toward paranormal beliefs were assessed via the Revised Paranormal Belief Scale (RPBS). Regression analyses showed that, although tendencies toward ADHD and depression did not influence stimulus interpretation, those with tendencies toward dissociation identified stimulus items as paranormal in nature significantly more than did those with lower dissociation scores. Dissociation was further shown to be related to paranormal beliefs as measured by the RBPS, consistent with earlier findings. Results are discussed in terms of the recon figurative dynamics known to operate in areas of human cognition such as eyewitness identification, and in terms of the generality of those effects to the realm of paranormal sightings.

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RACIALIZING CLASSROOM SPACES: REMIXING "THE RISING TIDE OF COLOR" AND WHITE FEMININITY

Speaker 3, a White female, discusses the structuring academic histories and racial formation of White female writing teachers, exploring, from classroom experiences and cultural artifacts of English teachers, the ways White female teachers may overly construct racialized spaces of engagement. Drawing on Lothrop Stoddard's The Rising Tide of Color (1920), Robert Lee's (1999) analysis of the book, and Nedra Reynold's (2004) theorizing of space and place, this presentation focuses on classroom spaces as a series of "inner" and "outer dikes," suggesting a practical parallel to Stoddard's "rising tide of color," often euphemized as "basic writing," "remedial," or "at risk" students in the academy. Stoddard's allusion to the White femininity of the geographical Western 'inner dikes,' which needed preserving and protecting against the so-called flood of Eastern races, provides a way for an interrogation of the speaker's own White female subjectivity in the classroom, and how her racial subjectivity influences the structuring of her classroom. Considering the everyday negotiations that create spaces within her classroom, this speaker looks at the racial formations that function as structuring structures (Bourdieu 1991) for her students. In analyzing the actual physical distribution, voicing, and positioning of bodies within the classroom, this presentation seeks to understand how the writing classroom disposes and determines racialized interactions and engagement. The purpose of the presentation is to consider for practical pedagogical applicationsthe mapping of the classroom as a series of Stoddard-like "dikes" that distribute racialized bodies and unnecessarily preserve White femininity, perhaps with harmful pedagogical effects.

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INTERACTIVE EFFECTS OF MECHANIZED CANOPY MANAGEMENT AND REDUCED DEFICIT IRRIGATION ON SHIRAZ GRAPEVINES

Canopy microclimate of Shiraz/1103P were altered and exposed to Reduced Deficit Irrigation (RDI) varying in severity and timing. Four canopy levels were imposed by dormant pruning the vines to 21 spurs (control), mechanically pruning to 10 cm hedges and mechanically thinning shoot and cluster density to 16 shoots/m, 20 clusters/m (CLL); 23 shoots /m, 30 clusters/m (CLM); and 49 shoots/m , 36 clusters/m (CLH), respectively. Control vines were irrigated to 70% ET until harvest (RDIC). Other vines either received 70% of full vine ET up to veraison, after which rate was cut to 50% of ET (RDIL) or had their irrigation cut to 50% of ET before veraison (RDIE), but not thereafter. At veraison, the shoots exposed per hectare were 53% and 39% lower for the CLL, and CLM; but 43% higher for the CLH when compared to Control. The distance between shoots was 137% and 81% higher for the CLL and CLM, but 29% lower for the CLH compared to Control. Compared to control, leaf layer number was 55% and 50% lower for the CLL and CLM, but 20% higher for the CLH. The RDIE and RDIL lowered the leaf layer number by 22% and 10%, respectively compared to RDIC. Berry weight was 2%, 5%, and 11% lowered by the CLL, CLM, and CLH, respectively. RDIE also reduced berry weight by 16% at harvest compared to RDIC and RDIL. Yield was reduced by 33%, 29% by the CLL and RDIE, but increased by 5% and 17% for the CLM and CLH, respectively. The CLL and CLM reduced the leaf area: fruit by 33%, and 54% respectively whereas the RDI treatments did not affect the leaf area: fruit. There was an interaction of canopy management and RDI stress on wine total phenolics, tannins, and anthocyanins where the CLM with RDIL had the highest tannins and total phenolics. The highest wine anthocyanins were seen with the CLM with the RDIE. This study provides important information for growers considering mechanizing canopy management operations while scheduling reduced deficit irrigation where best results were achieved with the CLM and RDIE treatments.

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SCHOOL-BASED SEXUALITY EDUCATION VS. PARENT-CHILD COMMUNICATION: ARE EITHER DELAYING ONSET OF SEXUAL INTERCOURSE OR INCREASING CONDOM USE?

INTRODUCTION: School-based sexuality education remains a major issue concerning youth across the United States as levels of sexually transmitted infections and pregnancies remain high. Additionally, nearly half (47%) of youths aged 12-14 years said their parents influence their decisions about sex more than anyone else. The purpose of this study was to examine whether associations exist between age of onset for sexual intercourse and use of condoms when considering both school-based sexuality education and parent-child communication about sexuality. METHODS: Non-random sample of 3,500 students, representing 54 schools in 23 school districts in a southeastern state were sampled using the CDC's YRBS-M. Four questions, related to sexual intercourse, condom use, and sexuality education were extracted. RESULTS: Thirty-six percent of males and 20% of females reported having had sexual intercourse. Findings revealed the following themes: 1) Talking with parents about sexuality decreased the odds for both males and females of having sexual intercourse during middle school years; 2) School-based education about sexuality decreased the odds for both males and females of having sexual intercourse, but not to a statistically significant level; 3) After having talked with their parents about sexuality, odds of a male using a condom were increased; 4) School-based education about sexuality had no impact on condom use for males or females. CONCLUSIONS: Good parent-child communication on sensitive topics such as sexuality, STD's, and condom use could greatly enhance the value of prevention messages to youth in middle school. Parents however do recognize the need for more and accurate information. Support for school-based sexuality education remains strong and broad based, but often is the target of political and religious differences, often at the detriment of quality and effective programming. Therefore, improved, skills-based sexuality education in schools is needed in order to impact students' behaviors.

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SYNTHESIS AND CHARACTERIZATION OF NEW, Chiral P-N Ligands and THEIR USE IN THE PALLADIUM-CATALYZED ASYMMETRIC Allylic Alkylation

The allylic alkylation reaction, a Pd-catalyzed transformation that tolerates a wide variety of substrates and results in the formation of a C-C, C-O, C-S, or C-N bond, is a very useful synthetic tool utilized by many organic chemists. The asymmetric version of this reaction (known as the AAA reaction) is of particular importance, as its products are useful intermediates in the synthesis of chiral drugs and other biologically important compounds. The alkylation of 1,3-diphenyl-2-propenyl acetate with dimethyl malonate has served as the model reaction for these catalytic studies. As with all symmetric metal-mediated reactions, the stereo-electronic characteristics of the chiral ligand(s) surrounding the transition-metal atom influence the activity and selectivity of the catalyst. In this regard, ferrocene-based chiral compounds with both P and N donor atoms have been shown to be very effective ligands in the AAA reaction. Gratifyingly, the catalyst formed using one of the P-N ligands prepared for this study showed particularly high activity (up to 99 % conversion) and selectivity (up to 90 % ee) when applied to the AAA. These catalytic studies, including the synthesis and characterization of the new, chiral P-N ligands will be discussed.

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CONSTRUCTING A MULTIPLEXER (SCANNER)

A multiplexer (scanner) is an apparatus which allows multiple sources or samples to share a single set of equipment. This is important in a lab conducting low temperature experiments with multiple samples and only one set of testing equipment.

Constructing a multiplexer solves the issue of equipment sharing, while saving money by not having to purchase an industry built multiplexer for ~$2000(homebuilt multiplexer cost less than $500). A 6-channel stand alone multiplexer was constructed in our lab for this purpose. The multiplexer was designed to assist in 4-wire measurements and can be used as an auxiliary instrumentation in testing sample properties such as resistance, magnetic susceptibility, and specific heat. A USB I/O module is used in the multiplexer to allow a computer to control the switching of equipment from one channel to another. This unit integrates the use of optocouplers, which, allows for a reduced noise level in the sample measurements by isolating the computer and I/O module from the apparatus involved in measurement. The multiplexer's noise level and switching times are of acceptable value and it is ready for use in a cryogenic system. Detailed will be the design, performance, and testing results for this unit.

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CALIFORNIA HISPANIC NURSES: ANALYSIS OF 1997, 2004, 2006, 2008 SURVEY DATA

The Hispanic population is growing dramatically in the United States. The growth in the Hispanic population is accompanied by the growth in its specific healthcare needs. Healthcare needs of ethnic communities are thought to be best met through culturally congruent, culturally competent nursing care. The 2000 National Sample Survey of Registered Nurses reports over a 200% increase in the Hispanic or Latino registered nurse U.S. population between 1980 and 2000. Despite the large growth, in 2000 only 2.4% of the total RN population was Hispanic.

This study will identify changes in the number and proportion of practicing Hispanic RNs, their level of education, location of employment, and wages by using the California Board of Registered Nursing (BRN) Surveys of 1997, 2004, 2006, and 2008. The specific objectives of this study are: (1) to identify the rate of growth of the Hispanic RN supply, (2) to identify any changes in the human capital characteristics of this population (level of education and years of experience) as compared to their Caucasian counter-parts, (3) to identify any changes in the location of employment and positions held, and (4) to examine any differences in hourly wages between the Hispanic and Caucasian RNs.

This research project is a secondary data analysis of California cross-sectional survey data. We will describe the California RN workforce, highlighting changes in the Hispanic nurses population between 1997 to 2008. Data analysis will be done using analysis of variance (ANOVA) to compare mean values. If differences are found, post hoc tests will be used to identify where the differences lie. Preliminary results indicate that the growth in the proportion of Hispanic RNs is lower than growth in the proportion of Hispanics in the general population, suggesting that more needs to be done to incentivize Hispanics to enter the profession. This study will inform policy makers and administrator so that better labor supply policies can be designed.

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FINANCIAL FORECASTING USING DATA MINING

This study presents a Business Intelligence (BI) approach to forecast daily changes in seven financial stocks' prices from September 1, 1998 to April 30, 2008 with 267 independent variables. The purpose of our paper is to compare the performance of Ordinary Least Squares model and Neural Network model to see which model better predicts the changes in the stock prices and to identify critical predictors to forecast stock prices to increase forecasting accuracy for the professionals in the market.

We used SPSS to perform stepwise regression to create a unique regression model for each company. Then, we ran the neural network with Alyuda NueroIntelligence to create a NN model by performing data analysis, data preprocessing, network design with hyperbolic tangent method, training with batch back propagation, testing, and query. We did data manipulation by using the first derivative and adding 0.1 to the absolute value of the minimum value in each variable to avoid minus sign from the rounding. Finally, we tested the model with the paired t-test in 152 randomly selected data points.

Our result showed that the neural network model (batch back propagation algorithm) outperformed OLS model. The %error for NN and OLS mean ranges from 2.13%-3.27% and 4%-32% and standard deviation ranges from 1.78%-3.39% and 2.46%-8%.

The OLS model is easy to use, validate, and works fast with lower forecasting accuracy because it is a linear model. NN has a better forecasting accuracy with no explanation of the relationship between interacting variables with dynamic results due to the learning setup. Some critical success factors to train NN are the network architecture, network design algorithm, training algorithm, and stop training conditions. Data normalization can make a huge difference to the result. We recommend more forecasting method and independent variables (e.g. expert opinion) to be included for future studies.

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INVESTIGATING THE ROLE OF METHYL FARNESOATE ON FECUNDITY IN THE TADPOLE SHRIMP, Triops longicaudatus

In crustaceans, evidence is accumulating that the precursor to the Juvenile Hormone III (JH III), Methyl Farnesoate (MF), regulates reproduction and development (Laufer et al., 1987; Laufer and Biggers, 2001; Borst et al., 2001). In tadpole shrimps, Triops longicaudatus, MF is a native hormone and appears to suppress and delay ovary development in 5-day old juveniles (Tsukimura et al., 2006). This study aims to expand on that study by investigating the amount of cyst produced daily, and in total, during one life cycle of the organism, under dietary MF treatment. Furthermore, we hatched the collected cysts in order to determine the viability of the eggs produced by MF-treated individuals in order to see if future generations are affected.

Cyst-containing soil was collected from a rice farm in Richvale, CA in the Fall of 2008. The cysts were hatched in glass bowls. Six day old animals were isolated in individual containers for easier monitoring, feeding, and cyst collection. Individuals were separated into two dietary groups: a control lacking MF and a treatment group subjected to a concentration of 6 ppm MF pellets. Cysts from all individuals are collected and counted daily. In order to enhance the hatch rate, prior to hatching, the cysts were desiccated and frozen. The viability of the cysts was determined by calculating the percentage of MF-treated cysts hatched compared to that of the control cysts.

In individuals that survive beyond 5 days of oviposition the mean daily cyst output were similar, but approaching significance ($p=0.09$). The control and MF-treated animals had 88.7±10.6 SEM cysts/day ($n=23$) and 76.5±7.3 SEM cysts/day ($n=25$), respectively. Similar results were seen with the total number of cysts produced by MF-treated animals compared to controls, 649.6±106.3 SEM cysts ($n=25$) to 809±151.7 SEM cysts ($n=23$) ($p=0.10$). No difference was seen in the number of days of oviposition between the two groups, control animals had a mean of 8.8±1.8 SEM days of oviposition compared 8.1±1.6 SEM in MF treatment.

Three trials of cyst hatching have been performed. The hatch percentage of cysts from the control had great variability among the three trials, 25.6%, 9.6%, and 14.2%, combined for a mean of 14.0%. The MF-treated cysts were slightly more consistent with 21.3%, 28.0%, and 20.2%, combined for a mean of 23.6%.

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The cyst collection data shows promise that dietary MF may decrease the amount of cysts these animals produce. This gives us hope that with a higher sample size or perhaps increasing the dietary MF concentration that the decrease in cyst production will becomes significant. The low hatch percentages of both groups, especially the control, compared to previous studies done on Triop cyst hatching have prompted us to question our methods for hatching these cysts.

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ACCULTURATION, PARENT-CHILD CONFLICT, AND ACADEMIC ADJUSTMENT FOR HMONG ADOLESCENTS

The purpose of this study is to access the extent to which acculturation and parent-child conflict affect Hmong adolescents' academic adjustment into the American school system. Children that are successful in school often have an integrated acculturation style in which they maintain Hmong values while also adopting the main American norms. Although, conflict can arise between Americanized teenagers and traditional parents. The ultimate goal is to inform school staff about the issues regarding acculturation and parent-child conflict among Hmong adolescents. This can build a positive alliance among Hmong students and their educators since it is important for all students to enjoy and succeed in school.

Participants are Hmong students (ages 14-18) from a local public school, grades 9 -12. These students were obtained from Hmong language classes, English-as-a-Second-Language classes, and Hmong student organizations. Hmong high school students received three total surveys. First, was a survey to access acculturation regarding language(s) spoken, cultural practices, and family history. Second, was a survey to access parent-child conflict concerning common arguments. Third, was a survey to measure academic adjustment, including topics such as academic success, satisfaction with friends, and career plans for the future.

Results will likely show that most students perceive themselves as "Hmong-American", rather than only "Hmong" or "American". This would reveal an integrated acculturation style. Considering oneself "Hmong-American" is expected to be positively correlated with a positive parent-child relationship which will provide for better academic adjustment.

The main conclusion is that Hmong children are more likely to be successful academically when they identify themselves as "Hmong-American" and have a positive relationship with their parents. This is providing that most students perceive themselves as "Hmong American" and this, along with positive parent-child relationships, are positively correlated with better academic adjustment.

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EFFECTS OF ACUTE STRESS ON HORMONAL REGULATION OF FOOD INTAKE IN TILAPIA

Food intake results from a set of complex hormonal and neural signals that integrate external stimuli with the internal milieu of the animal. Ghrelin – a stomach hormone – is known to stimulate appetite, whose actions are mediated by neuropeptide Y (NPY) in the hypothalamus. Further, the ghrelin receptor (growth hormone secretagogue receptor: GHS-R) has been shown to be located on NPY-containing neurons in the brain. In several fish species, a decrease in food intake following an acute stress has been observed. However, the hormonal mechanism controlling the reduction in food intake during stress has yet to be determined in any fish. This study was designed to investigate the effect of an acute stress on food intake and brain expression of NPY, ghrelin and GHS-R in the hypothalamus (regulates appetite) and telencephalon-preoptic area (regulates energy balance) in the tilapia (Oreochromis mossambicus). After a 30 min crowding and handling stress, fish were allowed to feed for 1 h, after which food intake was determined. An acute stress significantly reduced food intake compared to control fish. In a second group of animals, tissue samples were collected immediately following the stressor. Hypothalamic mRNA levels of NPY and ghrelin were significantly reduced, while GHS-R mRNA levels were significantly elevated. Conversely, in the telencephalon-preoptic area, NPY, ghrelin and GHS-R mRNA levels were significantly elevated. These results provide evidence that decreased food intake following an acute stress is mediated by suppressed mRNA levels of NPY and ghrelin in the hypothalamus. Further, our findings suggest that ghrelin and NPY are differentially regulated in different regions of the brain during stress suggesting that these hormones exhibit multiple regulatory functions related to overall metabolism. This work was supported by the National Science Foundation (IOS-0639771) awarded to LGR.

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BshA, a glycosyltransferase, CATALYZES THE FIRST STEP IN BACILLITHIOL BIOSYNTHESIS

Intracellular thiols are key molecules in the maintenance of cellular redox homeostasis and in protection of the cell against a variety of toxins and stresses. Glutathione satisfies this role largely among eukaryotes, the cyanobacteria, and other Gram-negative bacteria while low GC Gram-positive bacteria, such as Staphylococcus aureus, Deinococcus radiodurans, and multiple Bacillus species, contain the novel thiol, bacillithiol (BSH). Like GSH, BSH presumably serves as an antioxidant, either directly reducing the reactive oxygen species or indirectly serving as an electron donor to enzymes that are involved in detoxification. Recently, Newton et al (2009) elucidated the structure of BSH and demonstrated that it is the ά;-anomeric glycoside of L-cysteine-D-glucosamine with L-malic acid, establishing its similarity to mycothiol (MSH), the dominant low molecular weight thiol within high GC Gram-positive organisms. By analogy to the MSH biosynthesis pathway, we reasoned that the first step in the BSH biosynthesis pathway is catalyzed by a glycosyltransferase, BshA, responsible for generating N-acetylglucosamine-malate from the substrates UDP-N-acetylglucosamine and L-malate. In the present study, we characterize this enzyme from Bacillus subtilis following cloning into an E. coli recombinant expression vector and purification using nickel affinity chromatography. Effect of substrate concentration on enzyme activity was determined and the apparent Vmax and Km were calculated. Substrate specificity of BshA was investigated with D-malate, glycolate, lactate, isocitrate, glycerate, and 1-L-inositol-1-phosphate, the substrate for MshA, the glycosyl transferase that catalyzes the first step in MSH biosynthesis. Rates of product formation were significantly reduced for the substrates tested, with the exception of L-malate, indicating a high degree of specificity of BshA for its natural substrate. The results presented herein represent the first steps towards elucidating the biosynthesis of BSH and its intracellular function. Since BSH is present in pathogens such as S. aureus and B. anthracis and absent in the human host, enzymes involved in its metabolism, like BshA, are potential drug targets.

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INSTRUMENTATION FOR MEASURING SPECIFIC HEAT OF STRONGLY CORRELATED ELECTRON MATERIALS

The purpose of our work is to develop instrumentation that will investigate the thermal dynamical properties of strongly correlated electron materials. Rare earth compounds are of interest in our lab because they are known to exhibit strongly correlated behavior. A calorimeter is constructed to measure the specific heat of a sample material. The specific heat is a measure of how much heat is needed to raise the temperature of a unit mass of a substance by one Kelvin. The specific heat probes the internal energy of a material, which can give information such as entropy, effective electronic mass, stiffness of crystal structure (Debye temperature). The specific heat versus temperature graph can indicate where phase transitions such as superconductivity, metal to insulator, and magnetism occur. The temperature dependence of specific heat contributions from the crystal lattice and electrons can also be determined.

The calorimeter consists of a thermometer and resistive heating elements, which are thermally coupled to a sapphire disk as a sample stage. A temperature relaxation method is used due to the dynamic process of energy input and heat leaking out of the calorimeter. Using a well-written fitting program we can extract the specific heat, thermal equilibrium time and thermal conductance information of our calorimeter from the time-dependent temperature data.

We are currently calibrating our calorimeter by measuring the specific heat of copper since it is well known. The specific heat measurements we have taken from 20 Kelvin to 150 Kelvin indicate that our calorimeter is producing consistent results. Once the specific heat measurements are analyzed and shown to be consistent with values found in literature, for temperatures in the range of 150 Kelvin to 300 Kelvin or room temperature, we can proceed with using the calorimeter to study rare earth compounds.

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DIFFERENT-SUBJECT (DS) CONVERBS IN YAKUT

Converbs (sometimes also termed adverbial participle or gerund) can be defined as a non-finite verb form used for the expression of adverbial functions (Nedjalkov, 1987; Haspelmath, 1995). Nedjalkov (1998) classifies converbs according to the three criteria: referential, semantic and syntactic. Within the referential criterion Nedjalkov distinguishes three types of converbs: same-subject (SS), different-subject (DS), and varying-subject (VS). Pakendorf (2007) proposes that in Turkic languages the converbs' subjects are mostly coreferential with the subject of the main verb, thus featuring SS converbs. The language that I am going to study in this paper is Yakut, a Turkic language spoken in north-eastern Siberia of the Russian Federation. Both Nedjalkov (1998) and Pakendorf (2007) conclude that Yakut does not have DS converbs. However, Pakendorf mentions that in Yakut converbs can occasionally occur in DS constructions as well, and to support the statement, the researcher suggests this example: (1) ebee ayannïï hïjjan emčitterge emčitter bileller diebitiŋ duo grandmother journey CONV medicine medicine know say Q ebee grandmother 'Grandmother, when you journeyed to the healers, the healers knew, you said, right?' This data evidences the occurrence of DS converbs in Yakut which contradicts to Nedjalkov's statement, "The most significant fact about the Yakut converbal system is the absence of DS converbs." (Nedjalkov, 1998, p. 347). This paper proposes what I believe DS converbs are present in Yakut: (2) sarsun ayannïï sïljan tahaɤ ahïn süökeen kini tomorrow journey-CONV be-CONV cargo unload-CONV he büterin ketehieŋ duo finish-CONV wait Q 'Will you wait for him to finish unloading the cargo when you are journeying tomorrow?' (3) kini jietiger keleetin üöhetten ïstanan oyoɤ o ölbüte he home come-CONV height jump-CONV wife die 'As he came home the wife died jumping down from the height.' I propose that DS converbs in Yakut imply activities that are taken place simultaneously or coherently. To prove this statement more data is needed from Yakut. The paper will expand Pakendorf's statement with relevant data and account for the instances of DS converbs in Yakut, the presence of which has been generally questioned or denied by the researchers. REFERENCES Nedjalkov, I. (1998). Converbs in the languages of Eastern Siberia. Language Sciences, 20 (3), 339-351. Pakendorf, B. (2007). Contact in the prehistory of the Sakha (Yakuts): Linguistic and genetic perspectives. Analysis of divergent traits of Sakha (pp. 77-289). Utrecht: LOT.

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IMPLEMENTING THE POINT-NEURON MODEL IN SIMBRAIN

Recent research on the dynamics of neurons has led to the development of mathematical models that are based on the functioning of the brain, which are used to gain insight into human cognition. At the University of California, Merced, Dr. Jeffrey Yoshimi (2008) developed Simbrain, an artificial neural network simulator which does not require advanced mathematical experience to operate. The goal of this research was the implementation of the point-neuron model (PNM) (Munakata & O'Reilly, 2000) in Simbrain. The model calculates a neuron's membrane potential (voltage between the cell and surrounding fluid) before calculating the neurons activation value. This separation is distinct from other models and as a result more biologically plausible. If the input raises the potential to its threshold, the neuron fires sending input to the next neuron in the network.

Equations were coded in Simbrain and the simulator was configured to perform them in the correct sequence, an algorithm, in the source code. The user interface was then expanded to include the PNM. The graphical interface allows users to create networks of point neurons and easily set their parameters. Next, identical simulations were run in Simbrain and Emergent (another leading simulator) recording the outputs of the underlying computation. Successful implementation of the PNM should yield results comparable to that of Emergent.

Tables generated by Simbrain and Emergent were compared to validate the implementation of the PNM. Results indicate the underlying computations were consistent for all simulations. We have concluded the PNM can be integrated into an easily accessible, visually oriented software package for modeling cognition. In the next phase of the project, simulations of increasing complexity will be run for further validation. Additional mathematical models which compliment the point neuron will also be implemented.

References

O'Reilly & Munakata (2000). Computational Explorations in Cognitive Neuroscience. The MIT Press. Cambridge, Massachusetts.

Yoshimi J (2008). Simbrain: A visual framework for neural network analysis and education. Brains, Minds, and Media,

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TEST ROOM DESIGN FOR THE OBSERVATION OF PARTICULATE MATTERS ARISING OUT OF AGRICULTURAL MANAGEMENT STRATEGIES

Discussion on air pollution in California has been since long. Especially in the Central Valley area, the pollution is due to contributions of agricultural management strategies (AMS) that include pesticides odors, soot, smoke, pollen and dust.

These are several examples of wide range of different particles that contaminate the air and cause serious health problems. This type of air pollution is referred to as particulate pollution as it is caused by complex mixture of extremely small particles. Researchers have found that (according to the EPA - Environmental Protection Agency) the particulate matters pass through the throat and nose and enter the lungs thereby causes a wide variety of health issues ranging from allergies to lung and heart problems. Above and all, it also affects crops and vegetation by covering them and stunting their growth due to the shading effect and clogging of the plants' pores. Public concern has driven researchers to search for better approach that can help control and improve existing AMS. In order to better understand the behavior of such particles under various environmental conditions and agricultural scenarios an isolated and controllable test room is eventually needed. The objective of this research study is to design, analysis, and develop a test-room prototype that can facilitate research as regards to determination of pollution index and other demanding parameters. We will present the design and documentation of a unique dust particle matter automated test room which will be able to control and measure different variances including room temperature and humidity. The room consists of various components such a specially designed conveyor belt, dirt grinder, a heating/cooling unit, hydraulic lifters as well as temperature, proximity, and other sensors. The outcome will eventually help with the study of particulate matter behavior and lead to establish a platform for new AMS.

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THE METAL ION CONTENT OF DROSOPHILA MELANOGASTER EXPRESSING COPPER-ZINC SUPEROXIDE DISMUTASE (CuZnSOD)

Amyotrophic lateral sclerosis (ALS) is a neurodegenerative disease associated with the death of the upper and lower motor cortex. The genetically associated form of the motor neuron degenerative disease, fALS (familial amyotrophic lateral sclerosis) is associated with 135 point mutations in the antioxidant protein, copper-zinc superoxide dismutase (CuZnSOD). Studies show the point mutations are located throughout the enzyme and four mutations occurring near the copper and zinc active site while the rest are distributed throughout the entire enzyme. Trace element are important cofactors to various enzymes including SOD.

To gain insight into metal homeostasis and oxidative stress in protein SOD, a method to measure the metal ion content (copper, zinc, iron and manganese) in model Drosophila melanogaster (fruit flies) will be explore with inductive coupled plasma mass spectrometery (ICPMS). In a parallel experiment, whole flies were extracted and the lysates were analyzed for SOD protein content and enzyme activity using the nitro blue tetrazolium (NBT) native gel assay and Western Blot analysis.

CuZnSOD-expressing fruit flies (wild type-Canton S) of ages 0, 32 and 68 days old were measured using ICPMS displayed an increasing trend up to age 32 days then decreased in metal content (Cu, Fe, Mn and Zn) at age 68 days old. Western Blot analysis displayed SOD activities at 16 kDa. Metal ion content measured using ICPMS display metal ion content do not correlate with age, however ALS is an aged dependent motor neuron degenerative disease. The SOD activity observed using gel electrophoresis remain inconclusive whether SOD activity could be correlated with metal ion content.

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COMPARISON OF THREE SOIL RECLAMATION TECHNIQUES FOR GROWING PROCESSING TOMATOES IN WESTSIDE SJV

In the San Joaquin Valley (SJV), many growers are turning to higher value crops and alternative irrigation systems to increase their revenues. This is more common in the case of cotton growers in Westside SJV who are transitioning to vegetable crops, mainly to processing tomatoes using sub-surface drip irrigation. However, vegetable production in saline environments presents new challenges due to the salt sensitivity of these crops. In saline-sodic soils, high sodium (Na) content and low calcium (Ca) availability is a major problem for tomato production. Therefore, the objective of this study was to compare different soil reclamation techniques, i.e., Ca fertigation and irrigation water acidification, in an effort to increase Ca availability and decrease soil pH, thereby improving Ca uptake by plants. Four treatments were tested in the study with the applications of calcium-based fertilizers and acid through the sub-surface drip system. All four treatments were completely randomized and replicated four times. Marketable tomato yields were calculated and incidence of blossom-end rot was observed. Ca and Na concentrations of saturated paste extracts of soils were analyzed using AtomicAbsorption Spectrophotometer (AAS).

Results of the first year study conducted in 2009 indicated that the marketable tomato yield of the Ca Thiosulfate treatment (73 tons/ac) was significantly higher ($P < 0.05$) than that observed for the other treatments. However, no significant differences were observed in the occurrence of blossom-end rot, Ca and Na concentrations between treatments.

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SOCIAL TIME AND SPACE RELATED TO THE NOTION OF FESTIVITY THROUGH THE HMONG AMERICAN NEW YEARS

The purpose of the study is to examine the reproduction of the New Year and the notions of time and space associated with the idea of festivity in the Hmong American community in California.

The methodological approach has been based on qualitative data: fieldwork notes, observations, photographs, and interviews with participants and organizers of the New Years from 2000 to 2009, in California.

The findings show a persistent cycle of festivity that takes place each year from the end of October to January of the following year. The festive calendar remains lunar, with however a socio-economic determination that impacts the choices of celebration dates. The Hmong American community progressively celebrates New Year from North California (Oroville/Sacramento) to South California (San Diego/Long Beach), and finally to Central California (Fresno/Merced).

These cities serve as social nodes to link the Diaspora. During the New Year time, the community strengthens its ethnic identity by recalling and performing rituals, and by reliving traditional lifestyle such as eating traditional food, and exhibiting traditional clothes. The events of the New Year projects new hopes and commitments, and defines new symbols of ethnic identification associated with shared values and norms carried by the newly elected Miss Hmong, and the leaders, especially the main leader, General Vang Pao. The culture is revitalized within this intense festive period of the year. There is perpetuation of the rituals, cultural practices, beliefs, and language uses, which creates genuine feelings of ethnic bounds that tie and tighten each fragment of the Diaspora, and lead to a state of social cohesion and of reunion of the different diasporic communities as one and unique ethnic group.

The notion of social time of the New Year is in fact related to the idea of out-of-time where members of the community stop their everyday activities, and take a journey to reconnect with clans, lineages or households, but also with their "Hmongness". The social space for socio-cultural reproduction is inherent to the time of festivity: it's a time-space where the Hmong, stateless people, mark a visible boundary between "us" and "the others".

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IMPLEMENTATION OF THE PALS CURRICULUM IN A RESOURCE ROOM BY ASSIGNING CROSS-GRADE PEERS

The passage of the No Child Left Behind Act requires teachers to implement and use research supported practices in their classrooms. These practices must be applicable to core-curriculum instruction and must facilitate access to standards-based curriculum for students with disabilities. However, an extensive amount of research has been published pointing to ineffective instruction being provided in part time special education classrooms known as Resource Rooms. Furthermore, one study reported an inverse relationship between time spent in the resource room and student achievement. One method of instruction that has proven effective in such learning environments is peer tutoring. Peer Assisted Learning Strategies (PALS) was created to support the general, standards-based curriculum by manipulating a series of research based instructional methods to deliver reading instruction through peer mediation. The PALS curriculum centers around the use of high- achieving peers to prompt, correct, and reinforce lower-achieving peers in a series of reading tasks. Â PALS has shown to be effective in improving reading fluency and comprehension for both general and special education students. At this time, research on PALS implementation in a classroom serving multiple grade levels using cross-grade peers has not been conducted. With the extensive research pointing to the lack of proven instructional methods used in the resource room, combined with the research supporting PALS, and cross-aged peer tutoring, it was the purpose of this study to investigate the combination of these instructional methods within the resource room. This study, implemented the PALS curriculum into a resource room, serving second through sixth grade, utilizing a multiple baseline by dyad design. The results of this examination will be presented. The effectiveness of implementing the PALS curriculum in a resource room, serving multiple grade levels by assigning cross-grade peers according to ability will be discussed.

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EFFICACY OF A SLOW RELEASE NITROGEN FERTILIZER FORMULATION

Among the essential plant nutrients, nitrogen (N) is unique because of its potential to increase crops yields and to be lost to the environment. Advances in N fertilizer technology have produced slow release nitrogen fertilizers (SRNFs) aimed at supplying N at different growth stages, thereby maximizing the N uptake and minimizing losses due to leaching, volatilization and denitrification. In this first phase of a study to investigate the nitrogen use efficiency (NUE) of SRNF applied to vegetables, we evaluated the effect of a SRNF formulation, applied at relatively high rates, on tomato yield and the potential for nitrate leaching. During the summer of 2009, an experiment comprising of a split-plot design with four replicates, were conducted on sandy loam soils at the Center of Irrigation Technology (CIT), Fresno. The SRNF formulation was compared to the conventional UAN fertilizer (main factor), applied at rates of 150, 225, and 300 lbs N/ac (subplot treatment). In addition to tomato yield and quality data, pre-plant and post harvest soil samples were collected to estimate the amount of nitrate available for leaching. There was no significant difference among the total number and total weight of tomatoes between the two fertilizers. However, fertilizer rates significantly affected the number ($P=0.022$) and weight ($P=0.032$) of green tomatoes. As the mature green tomatoes ripened the Brix index increased from 4.6 to 5.3 at 20 days after harvest (DAH). Neither fertilizer types nor rates had any significant effect on the change in sugar levels of the tomato during the shelf life study. Post-harvest soil NO3-N levels at each of the four depths examined were lower than the

preplant NO3-N levels, thereby indicating a low potential for N leaching below the root zone. Overall, there was no significant difference in the nitrate concentrations at the various soil depths for the two fertilizers examined in this study.

The one time application of the SRNF represents a potential saving in energy, fuel and labor requirement in comparison to the multiple UAN fertilizer applications traditionally used in growing tomatoes.

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BRINGING BLOGS INTO THE CLASSROOM

Recent studies have shown that Web 2.0 technologies such as blogs, wikis, podcasts, and other powerful tools for education can help strengthen students' critical thinking, writing, learning, research, and reflective abilities, and engage students in a new world of information sharing and social learning. The study aims to evaluate the effectiveness of blog-mediated learning, knowledge discovery and creation within the scope of information science education. The study also aims to investigate the design and usability issues of classroom blogs.

The research methods used in this study include:
1) Literature review on blogs, the use of blogs in education, and constructive social learning theories.
2) A case study where a class blog is implemented and students' learning result was evaluated using survey questionnaire.

The findings demonstrate that blogging and sharing topics that are relevant to the course material motivates students' learning – they learned emerging information technologies outside the scope of lecture and textbook through looking for relevant topics for their blog posts, presenting and discuss their posts in class, and reading their classmates' posts; they developed strong and independent research skills. The findings also reveal that the design and usability of the blogs matters the students found it easier to share and manage posts in an aggregated class blog compared to discrete individual blogs.

The study concludes with a discussion of the opportunities as well as challenges of bringing social media tools like blogs into classrooms, such as the assessment of learning, the monitoring of student participation, the need for user support, and the options of the blog design.

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BOYS AND GIRLS: GENDER DIFFERENCES IN OUTCOMES OF PARENTAL ABUSE

The study of the long-lasting psychological effects associated with physical and sexual abuse has been an area of inquiry for researchers for many years (Brown, et al., 1999). The degree to which children are impacted with depression as a result of physical and sexual abuse differs depending upon the gender of the child. The objective of this study was to broaden the scope of abuse and compare differences between males and females as it relates to the impact of verbal, physical, and sexual abuse. The results are surprising yet consistent with previous research.

A sample of 383 volunteers completed a series of measures used to analyze gender differences in regards to depression as a result of parental physical and verbal abuse and sexual assault from within or outside the home. Additionally, quality of the relationship with each parent, such as warmth and closeness, was assessed. To gain a better understanding of differences related to sex, separate analyses were run for females and males.

Results show that verbal abuse from the same sex parent was the most significant predictor of depression. Analyses for males and females both showed one additional significant variable. For males a positive relationship with mother was related to lower levels of depression showing a protective aspect of this relationship. The same was not true for the females. For females the only other significant variable was moderate physical abuse from father. Overall, males were verbally and physically abused more than females however, consistent with previous literature, females were more often the victims of sexual abuse and assault. Surprisingly, sexual abuse/assault alone was not a significant predictor of depression for either males or females, though this is consistent with other studies incorporating verbal abuse (Boyd, 2006).

POSTER PRESENTATION ABSTRACTS

(IN NUMERICAL ORDER BY POSTER BOARD NUMBER)

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Poster Session I
Poster Board No.1

AN EXPLORATORY STUDY ASSESSING THE RELATIONSHIP BETWEEN SYMBOLIC RACISM AND SOCIAL DOMINANCE ORIENTATION IN A MULTICULTURAL ENVIRONMENT

The primary aim of this study was to explore whether or not there was a relationship between symbolic racism, a new form of racism different from traditional racism, and social dominance orientation (SDO), an attitude predictors and standard personality variable, in a multicultural environment (location where four or more ethnic groups interact daily, and where no single ethnic group makes up more than 50 % of the total population). Thirty-three San Jose State University students enrolled in upper division psychology courses completed an eight-item symbolic racism scale and the Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth, & Malle, 1994). The data confirmed a significant moderate positive relationship between symbolic racismand SDO. Implications for further research suggest conducting similar research with larger samples.

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Poster Board No.2

IDENTIFYING CULTURALLY COMPETENT CLINICAL SKILLS IN SPEECH-LANGUAGE PATHOLOGISTS WORKING IN THE CENTRAL VALLEY OF CALIFORNIA

The purpose of this research study was to identify specific clinical skills in Central California speech-language pathologists (SLPs) that may constitute cultural competency. Through qualitative interview methods, data were collected from SLPs in Central California who have frequent contact with children and families who are culturally and linguistically diverse (CLD). Interview data were analyzed to identify descriptions of specific clinical practices, if any, the SLPs fest are helpful when working with CLD children and families. Methods used to ensure trustworthiness, or credibility, believed to establish qualitative research validity included: (1) establishing descriptive validity, (2) working collaboratively, (3) searching for data triangulation, (4) seeking participant feedback, and (5) undergoing peer review. Clinical implications were discussed and suggestions for future research to document efficacy of identified culturally competent clinical skills were made. At the time of the composition of this abstract, data analysis had not yet been completed. Independent analyses to discover dominant themes will be conducted by the author of the research and the student presenter, who will then come to a consensus regarding the validity of those themes, which will then be discussed in this poster presentation.

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EFFECTIVENESS OF CARRIER RNA CO-EXTRACTION METHODOLOGIES USING THE QIAGEN BIOROBOT EZ1® AND EZ1® DNA INVESTIGATOR KIT

An internal method validation for the use of carrier RNAs (cRNA) to increase DNA recovery from highly degraded forensic samples was conducted for the Kern County Regional Criminalistics Laboratory (KCRCL) using Qiagen's BioRobot EZ1® automated DNA extraction platform. The validation study sought to identify the critical aspects of the procedure which must be controlled and monitored while additionally defining the limitations of the new procedure. The study evaluated the effects of cRNAs on the sensitivity/linearity, reproducibility, and concordance of the procedure on a host of known and nonprobative case samples. Substrates employed in the study included a certified reference material (NIST DNA-Standard 9947A), human blood, semen, calcified tissue and transfer (touch) samples. Study samples were run in triplicate with and without the addition carrier to cell lysates. Samples were purified using a Qiagen BioRobot EZ1® and EZ1® Investigator Kit. Quantitation of DNA extracts was performed using a Quantifilier™ Human DNA Kit and a 7500 Real-Time PCR System. Samples were amplified using a GeneAmp® PCR System 9700 with AmpFℓSTR™ Identifiler Kit. Genotyping of PCR products was carried out using a 3130 Genetic Analyzer and analyzed using GeneMapper® ID (ver3.2.1). Samples having carrier RNAs added to lysates showed a 1.2-22 fold increase in DNA recovery. The addition of cRNA to cell lysates presented to interference to downstream processes and was applicable to sample types encountered in a forensic context. The results of the internal method validation concluded the addition of carrier RNAs to cell lysates greatly increases the amount of DNA recovered as compared to non-carrier RNA containing samples. The method is now being considered for implementation in daily forensic DNA analysis at KCRCL.

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PERCEIVED SUPERIORITY IN ROMANTIC RELATIONSHIPS: BLAMING THE PARTNER FOR UNDESIRABLE FEATURES

People have a tendency to judge their own romantic relationship as better than others'. We tested this effect in two separate studies -- one study featuring a conventional rating system to examine the effect and the other featuring a thought listing procedure. Both of these studies produced statistically significant results displaying the perceived superiority effect. Based on these two studies, we have concluded that people tend to believe that their romantic relationships are better than others'. One previous study has shown that this superiority effect can be eliminated by asking people to be honest and accurate in their assessments. We hypothesize that this is because people can blame their partners for undesirable features of their romantic relationship. This hypothesis is currently being explored using a thought listing procedure.

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Poster Board No.5

READING INTERESTS: A COMPARISON OF REQUIRED READING AND RECREATIONAL READING AMONG COLLEGE STUDENTS AND ITS IMPACT ON ACADEMIC SUCCESS DEFINED BY COLLEGE GRADES

The purpose of this literature review is to analyze any literature that focuses on the relationship between time spent by college students engaging in required reading opportunities versus the time spent doing recreational reading in relation to students' success. Prior research has shown that individuals engage in reading based on the motivation which is acquired and influenced by their surroundings. Other literature supports that reading habits and interests differ clearly across gender, age, socioeconomic status, and possibly race. Furthermore, studies have shown that situational interest, rather than choice or topic interest, promotes engagement in reading. Some literature conveys that reading interests mirror crystallized abilities and personality factors to a great extent. Several studies indicate that students perform academically better as they engage more in recreational reading. In terms of gender, research has demonstrated that there is an actual link between gender, reading interest, and reading engagement.
My future study will help to fill the gap in literature that will specifically explore the relationship between time spent by college students engaging in required reading opportunities versus the time spent doing recreational reading; moreover, we will look into any connection between both required reading and recreational reading and student's success.

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OPTIMAL STRATEGIES FOR A RIDE AND TIE RACE

In a world constantly looking to seek the fastest computers, shortest routes, and cheapest fares, methods for solving optimization problems are in high demand. In this project we explore a "ride and tie" race which is a race over a specified distance where teams of two compete against each other by interchangeably running and biking. The race starts with one person running while the other bikes, after an agreed upon distance, the competitor on the bicycle leaves the bicycle and starts to run. The competitor that was running then rides the bicycle once they reach its location and then they switch again at a further distance, and so forth. We study the problem of finding an optimal race strategy with a variety of different assumptions. Techniques in linear programming and nonlinear programming will be used, and properties of optimal strategies will also be discussed. Our models determine an optimal strategy based on the different strengths and weaknesses of the competitors. They also can be used to predict specific outcomes from various situations that may arise.

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AN ANALYSIS AND REPRESENTATION OF GERMAN PHONETIC CONSTRUCT EVIDENCED IN A BAVARIAN DIALECT WITH HIGH GERMAN DIALECTAL INFLUENCE

This paper accounts the construction of German phonology and addresses various attributes and unique qualities of the language. The particular dialect that was analyzed was that of a 24 year old man who was born and raised in Ebensfeld, Bavaria. As German is a pluricentric language, the individual tends to incorporate many pronunciations of the more standard German dialect of High German as he is studying business in a university setting at a more northern location in Germany. In conjunction, the writer has a working knowledge of the High German dialect. To acquirethe data analyzed the author translated, recorded, and transcribed the individual's pronunciation of the 200 words which form the Swadesh list.The Swadesh list contains words that are distinctly unique to every language, lacking a high probability of words being borrowed or derived from another language and were determined by the use of lexicostatistics and glottochronology. The author broadly transcribed the pro nunciation of all 200 words and then performed a comparative analysis of Germanic phonemes and categorized them according to their place and manner of articulation. The author then narrowly transcribed the words and repeated the process to reveal allophones, which fall in complimentary distribution, and consequently all distinctive attributes of the individual's pronunciation and dialect. Results for the distinctive features of this particular German dialect are numerous but entail some of the following: aspiration after voiceless stops excepting when followed by a sibilant, the transformation of Ich-Laut to ˜Ach-Laut after back and central vowels, the assimilation of the nasal alveolar /n/ in the coda of a syllable when preceded by a stop or fricative with a different manner of articulation, and the nasalization nof vowels before nasal consonants.

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THREE STAGE VIBRATION ISOLATION FOR UNMANNED AERIAL VEHICLE GIMBAL TARGETING SYSTEM

Model airplanes such as the Sig Rascal experience vibration and excitation forces derived from the rotating blades and the reciprocating parts of the gas engine. These forces are transmitted through the engine mounts to the fuselage and other parts of the airplane. The transmitted vibrations to the fuselage of the Sig Rascal caused the TASE gimbal and the electronics mounted in the fuselage of the Sig Rascal to fail in operation. In order for the mounted equipment to work properly, the vibrations had to be reduced to acceptable levels. The vibration studies were conducted to determine the loads exerted to the fuselage by the rotating blades and the gas engine. Vibration loads of 18g were recorded in the Sig Rascal TASE gimbal mount. Therefore, a major objective was to reduce the forces transmitted to the TASE gimbal mount. To resolve this, shock and vibration absorbing studies were conducted and proper materials were introduced to isolate vibrations from important components such as the TASE gimbal. The design of vibration isolators consisted of three stages. The first stage isolates the vibrations to the engine mount from the blades and the gas engine. The second stage isolates vibrations from the engine mount to the fuselage of the airplane.

The third stage isolates vibrations from the fuselage to the gimbal mount. The third stage incorporates Broad Temperature Range Elastomers (BTR) mounts, which were found to be of the optimum material given the base vibrations experienced by the TASE gimbal mounts. The vibration measurements show that the vibration loads to the TASE gimbal were reduced to less than 3g in all the X, Y, and Z axis with vibration absorbing materials. A performance comparison of the vibration isolation system between a gas and an electric engine was also studied. An effective solution was implemented that allowed the TASE gimbal to function satisfactorily and the airplane to achieve its mission goals.

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DEVELOPMENT OF PROTOCOLS FOR ENRICHMENT OF SPECIFIC ENDOCYTIC VESICLES INVOLVED IN B3 INTEGRIN RECYCLING IN A CELL CULTURE MODEL SYSTEM

Integrins are transmembrane glycoproteins consisting of αβ-heterodimer that mediates cell-cell, cell-extracellular matrix, and cell-pathogen interactions. Integrins directly influence cell signaling which, in normal cells, affects cell migration, proliferation, differentiation, and survival. αvβ3 integrin is an important heterodimer involved in metastatic cancer. Integrins are known to be recycled from the membrane to the inside of the cell but, the specific pathway that is utilized is not clearly defined. Our study is to determine which pathway of endocytosis is utilized for integrin recycling. The two pathways we will look at are clathrin coated vesicle (CCV) and caveolae vesicles. We are using three cell lines in this experiment; β3/293, β5/293, and HEK/293.

Caveolae vesicles and CCVs are enriched by centrifugation from the pelleted cultures. The resulting enrichment is verified by use of immunoblotting. After establishing enrichment of the vesicles, the enrichments were immunobloted for β3 integrin. Reverse transcriptase polymerase chain reaction (RT-PCR) was done on caveoin-1, caveolin-2, and clathrin heavy chain.

Amplicons were resolved by agrose gel electrophoresis. Current findings suggest an increased expression of integrin in β3/293 and β5/293 from caveolae vesicle enrichment. Clathrin coated vesicle enrichment has not produced desired enrichment results. An interesting finding was discovered when optimizing caveolin-1 PCR primers. Cell lines β3/293 and HEK/293 show an increased expression of caveolin-1 and caveolin-2. Further investigation of their isoforms is now being looked into. Further research and data is needed to help determine if caveolin is being over expressed and if so, in which cell lines. A more effective protocol is also needed in CCV enrichment so further experimentation can be done.

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CORRECTING FOR THE EFFECTS OF EVAPORATION ON THE GCMS ANALYSIS OF IGNITABLE LIQUIDS

A GC-MS data pre-processing strategy has been developed that allows for the comparison of highly evaporated gasoline samples with a library of unevaporated source products. This pre-processing strategy improved the correlation (R2) of data before and after being 90% evaporated by mass from 0.35 to 0.98. When searched against a library of over 100 unique source products, five gasoline samples were correctly identified to at least 75% evaporated and matched a gasoline product to greater than 98% evaporated.

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EXPERIMENTAL STUDY OF STRUCTURAL, ELECTRICAL, AND OPTOELECTRONIC PROPERTIES OF ZINC OXIDE NANOSTRUCTURES

The semiconducting zinc oxide nanostructures are attracting increased attention in the science and technology communities partially because of their unique electric and optical properties with wide energy band gap (3.4eV) and large exciton binding energy (60meV). Their broad potential applications are from nanolasers, solar cells, photodetectors, and optical switches to piezoelectric generators, nanosensors, and electron transporters and transistors. Many of these applications are possible and enhanced due to the use of ZnO nanostructures. In this paper we present the synthesis of nanostructures including nanowires, nanobelts, and nanopillars using tubular furnace chemical vapor deposition techniques via vapor-liquid-solid mechanism. The as-grown ZnO nanostructures which greatly depend on synthesis conditions especially growth temperature were examined with SEM, TEM and XRD. Current-voltage (I-V) measurements were employed to investigate the electric properties of ZnO nanowires with various target gas environments and with laser irradiation. The I-V curves at temperature ranged from 150 to 300K were recorded under vacuum, and the Arrhenius plot shows perfect linear of I and 1/T. the donor level of the semiconducting nanowires is about 326meV. We observed that with the laser beam the current increased 50% compared to that of laser absence. The I-V behaviors were found to be reversible with various target gases and it was enhanced by a factor of four under a reductive gas, CO. Further studies on ZnO nanostructural mechanical properties and bio-senor applications are undergoing.

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USING TAG TEACHING TO DECREASE TOE WALKING IN A CHILD WITH AUTISM

Many children with autism exhibit toe walking from an early age. Consistent toe walking can be damaging to the leg and ankle muscles as the child gets older making it more difficult to walk flatfooted. Few studies have been conducted using behavioral interventions for toe walking (Marcus, Sinnot, Bradley, and Grey, 2009). Studies employing methods to decrease toe walking have used techniques that may be aversive to some children and may be costly. TAG Teach (Teaching with Acoustical Guidance) is a method of teaching behaviors through positive reinforcement by using a "click" sound that identifies correct behaviors. In the current study, TAG teach was used to teach a four-year-old child with autism to walk flatfooted by providing the reinforcing "click" sound contingent on flatfooted steps. This has implications for decreasing toe walking in other children with autism and can easily be used by teachers and parents.

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Poster Board No.13

THE IMPACT OF PHYSICIAN AT INTAKE ON PATIENT CARE AND STAFF SATISFACTION AT AN ACADEMIC EMERGENCY DEPARTMENT

Introduction/Objectives: Studies in emergency departments (EDs) have demonstrated that the time to see a physician and length of ED stay (LOS) have the strongest correlation to patient satisfaction as well as decreased left without being seen rates (LWBS). It is proposed that having a designated area (intake) will decrease time to provider and LOS. Intake is an area where patients with non-emergent complaints are seen by a doctor and a team of nurse and ancillary staff. They receive a screening exam and are either treated and discharged (if possible) or initial studies and treatment are begun until an ED bed becomes available. It is unknown if a physician in an intake area affects resident and nursing education in an academic institution. The objective of this study was to determine the effects of having a physician in intake on LWBS and LOS rates, patient satisfaction, resident education, and staff satisfaction. Methods: A prospective, observational, convenience sample survey was conducted among ED nurses, attending physicians, and residents. An attending physician was assigned to an intake area and paired with nursing staff in March, 2009. A pre-implementation survey was conducted in February, 2009 and a post-implementation survey was conducted one year later. Patient satisfaction surveys were collected prior to implementation and continued throughout the study period. The LWBS rate and average length of ED stay was extracted from hospital data from December, 2008 through May, 2009. Data from December 2008 through February, 2009 was compared to data from March, 2009 through May, 2009.
Averages were calculated for LWBS, time to provider, LOS, and staff, physician, and patient satisfaction before and after implementation. Results: LWBS for pre and post-implementation was 5.66%, n=26601 and 8.46% n=31362 ($p<0.0291$) respectively (December, 2008 through February, 2009 and March through June, 2009). Average time to provider pre and post-implementation was 110 and 140 minutes ($p>0.0918$). LOS for pre and post-implementation was 287 and 273 minutes ($p>0.3657$). Patient Satisfaction prior to implementation was 4.3 (very good) and post-implementation was 4.6 (excellent) ($p>0.0603$). Staff satisfaction prior to implementation was 2.9 (good) n=79 and was 3.25 (very good) n=63 post-implementation ($p>0.2605$). The staff's view of the system's effect on resident education was 2.9 (good) prior to implementation and 3.5 (very good) post-implementation ($p>0.5760$). Conclusions: Data collection is ongoing, but preliminary results suggest that physician presence in intake does not positively affect the LWBS rate or time to provider. LOS was reduced but was not statistically significant. Patient and staff satisfaction rates rose but were also not statistically significant. Key Words: Triage, intake, LWBS, patient satisfaction, time to physician.

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KINETICS OF THE REACTION OF PROPYLENE OXIDE WITH CHLORINE ATOMS

Methyl bromide is an insecticide that has been widely used by the agricultural industry as a fumigant. However, the use of this pesticide is being phased out because of the damage that it causes to the stratospheric ozone layer, which protects the earth's surface from harmful ultraviolet (uv) light. Propylene oxide (PPO) has been proposed as a potential alternative for some of the current applications of methyl bromide. The atmospheric chemistry of this species has not been studied, therefore the impact of its use on air quality is unknown. An evaluation of the atmospheric chemistry of a pollutant requires that a) the reactivity of the pollutant in the atmosphere is known, and b) the reaction products are well characterized. This work focuses on the rate of reaction of PPO with chlorine (Cl) atoms. Cl is widely used in atmospheric chemistry studies as a proxy for OH radicals, which is the most important initiator of chemical change in the atmosphere. The rate of reaction of chlorine atoms with PPO was measured in a smog chamber using the relative rate method. Mixtures of PPO, chlorine, air and a reference compound were introduced into the chamber, and were then irradiated using uv light from internally mounted blacklight lamps. Changes in the chemical composition were monitored by long-path Fourier Transform Infra-Red (FTIR) Spectroscopy. The rate coefficient for Cl + PPO was then determined from the relative decrease in the concentrations of PPO and the reference compound. Rate coefficients of 2.4 × 10-11 and 2.6 × 10-11 cm3.molecule-1.s-1 were measured using methanol and acetaldehyde as the reference compounds, respectively. There are no previous measurements of this quantity for comparison, but the rate coefficient is about five times higher than that of ethylene oxide, as expected based on the structure of the two molecules. The chemical and atmospheric implications of these results will be discussed.

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INDIVIDUAL DIFFERENCES IN THE TENDENCY TO TRANSMIT NEGATIVE GOSSIP

Foster (2004) defines gossip as "the exchange of personal information (positive or negative) in an evaluative way (positive or negative) about absent third parties." Positive gossip refers to information about socially approved behavior. Negative gossip refers to information about negative social occurrences and information that has potentially bad influence on others. Research has suggested that there are individual differences in gossip behavior. However, no research has been done on individual differences in transmitting negative gossip. This study examined the personality predictors for the tendency to transmit negative gossip. The personality predictors included: 1. Social values: Gossip as a way to gain information and relationships. 2. Moral values: Concern about the ethics to gossip and the truthfulness of gossip. 3. Interpersonal curiosity: The desire to get information about others. 4. Social desirability: A need for social approval. 5. Machiavellianism: A strategy of social conduct that involves manipulating others for personal gain, often against the other's self-interest. 6. Indirect interpersonal aggression: An intention to harm others without face-to-face interaction. Participants were recruited through the experimenter's email list and the Psi Chi International Honors Society, CSUF chapter's students. Two hundred and twenty four people volunteered to participated in this study, 78 participants were excluded due to incomplete questionnaires and that left 146 participants (Male: 39, Female: 107; Asian: 70, Non-Asian: 69). Online surveys were created using Surveymonkey.com. Participants completed five personality questionnaires (Attitude toward Gossip Scale, Interpersonal Curiosity Scale, Social Desirability Scale, Machiavellianism Scale, and Indirect Interpersonal Aggression Scale) followed by a 6-item questionnaire developed by the experimenter to measure the tendency to transmit negative gossip. At the end of the online survey, participants were asked to fill in their demographic data.

A reliability analysis was conducted for the 6-item questionnaire ($\alpha = .847$) which suggested the 6-item questionnaire was reliable. The results showed that all personality predictors were significantly correlated with the total score of the 6-item questionnaire. The results indicated that moral values and indirect interpersonal aggression were the strongest predictors of the tendency to transmit negative gossip. In conclusion, although all personality variables were significantly correlated with tendency to transmit negative gossip, moral values and indirect interpersonal aggression are the strongest predictors to predict whether a person is more likely to transmit negative gossip.

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"A QUALITATIVE STUDY OF THE REFUGEE HMONG IN FRESNO COUNTY CALIFORNIA: HEALTH BELIEFS ABOUT CHILDHOOD INJURY AND HEALTH

"A Qualitative Study of the Refugee Hmong in Fresno County California: Health Beliefs about Childhood Injury and Health" is a pilot exploratory study to examine Hmong parental beliefs about injury and health in their young children. A focus group of English literate Hmong parents evaluated a standardized questionnaire to determine conceptual and contextual validity, for the Fresno Hmong parent population. A typical case network sampling qualitative methodology was applied to provide conceptual and contextual validity input for the questionnaire that measures parental health beliefs effecting childhood injury prevention measures for Phase 1 of this 3-part study. The participants provided input concerning the major conceptual categories of the tool based upon the Health Belief Model: Susceptibility, Seriousness, Barriers, Benefits, Self-efficacy and Social Support and the 65 contextual sub-questions. Input resulted in changes that will be incorporated into Phase 2 for validity testing to determine the use of this questionnaire in safety and health promotion strategies in Hmong-American families for their children.

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TOLERANCE OF ACANTHAMOEBA TO LOW OXYGEN LEVELS: IMPLICATIONS FOR PATHOGENICITY

Acanthamoeba is a common free-living soil amoeba, perhaps the most frequently isolated naked amoeba from the environment. On rare occasions, this amoeba is opportunistically pathogenic and invades the cornea giving rise to a sight-threatening disease, Amoebic Keratitis. Although rare (1 to 2 cases per million lens wearers) this remains a concern for contact lens wearers. The reasons why amoebae should invade the eye are unknown and there is a need for research to understand the etiology of this disease. Amoebae are unique amongst the protists in that they live within bacterial biofilms. Here, they may experience reduced levels of oxygen. It is hypothesized that a poorly cleansed contact lens may harbor a bacterial biofilm and permit acanthamoebae to proliferate (if they are indeed capable of growth in low O2). The tolerance of a collection of strains (pathogens + non-pathogens) was compared for cultures grown aerobically and microaerophilically. Blocks containing exponentially growing trophic amoebae were dissected from stock cultures and grown on non-nutrient agar with E. coli prey.
The distance migrated (mm) was measured after 5 d incubation in air and under reduced oxygen levels in a gas jar. Migration was a function of cell division and thus was an index of growth. Acanthamoeba spanning a range of genoyptes were tested since some published data suggests the T4 genotype is of greater concern than other types. Results demonstrated that all Acanthamoeba (regardless of genotype) grew well under both aerobic + microaerophilic conditions. In fact most strains grew better in reduced oxygen. This ability of the genus to thrive in low oxygen conditions may indeed by an important factor in the course of the disease. Poorly cleansed lenses may harbor populations of amoebae capable of invading the cornea particularly when wearers are asleep and the surface of the eye experiences reduced oxygen.

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EFFECT OF PHYSICIANS' EXPRESSIONS OF UNCERTAINTY AND PHYSICIAN SEX ON PATIENT PERCEPTIONS

Effect of Physicians' Expressions of Uncertainty and Physician Sex on Patient Perceptions Janna Tassop and Paul C. Price California State University, Fresno Traditionally, physicians have been discouraged from expressing uncertainty (e.g., Katz, 1984). Recently, there has been a shift from the paternalistic approach to a shared decision making model. With SDM, the patient is viewed as an active participant in their healthcare and the communication of uncertainty is encouraged. There is some evidence that physician expressions of uncertainty have negative effects on patient satisfaction (e.g., Gordon et al., 2000; Ogden et al., 2002). In the present study, we try to replicate this effect in a carefully controlled experimental design—while also varying the sex of the physician, which has not been done before. This seems worthy of examination because the number of female physicians continues to grow, because prior research on the sex of a physician and overall patient satisfaction is conflicting (e.g., Hall et al., 1995; Zandbelt et al., 2004), and also because it seems possible that the effect of expressing uncertainty could be different for each sex. Students will (data collection to begin next week), read a prompt asking them to imagine they have been experiencing a set of symptoms before hearing a diagnosis from "Dr. Williams." The doctor will be either male or female and give either a certain diagnosis (where only one possibility is presented) or an uncertain diagnosis (where two possibilities are presented). They will rate the physician on various dimensions, including competence and confidence. We predict that the uncertain physician will be viewed less favorably and that there may be an interaction between uncertainty and sex—with the uncertain female physician being viewed least favorably.

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Poster Board No.19

NON-TEMPLATE POLYMERIZATION OF NUCLEOTIDES INTO GENETIC ELEMENTS BY THERMOPHILIC DNA POLYMERASE IN VITRO

DNA synthesis is the corner stone of all life forms and is required to replicate and restore the genetic information. It constitutes the structural genome and the genetic molecular communication system of living organisms on earth. The replication and evolution of the genetic information occur on pre-existing DNA or RNA templates with high fidelity. In living cells, the replication of genetic information is catalyzed by DNA polymerase, after initiation by primase in the 5' to 3' direction. Genetic information cannot be created without DNA or RNA templates in vivo, although the exception may be the process of translesion DNA synthesis, which is a pathogenesis-related nucleotide repeat expansion due to slippage during DNA replication or repair when DNA damage occurs (Gavin KA et al, 1995. Science 270: 1667-1771. Fumio Hanaoka. 2001. Nature 409: 33-34. Ji J, et al., 1996. Nucleic Acids Research 24: 2835-2842). We report here that DNA molecules could be created by thermophilic DNA polymerases in the absence of any DNA or RNA template at constant high temperature (74 °C), alternative changing temperature (74°C/37°C), or physiological condition (37 °C) during various lengths of time. We tested native and recombinant Taq DNA polymerases, Tth Taq DNA polymerases, SuperTaqPlus DNA polymerase, and Pfx DNA polymease from various suppliers. Most DNA polymerases produced DNA molecules with all 4 kinds of dNTPs in various sizes except the Pfx DNA polymerase. Non-template DNA was also successfully polymerized with 2 or 3 individual free dNTP combinations, including dATP+dTTP, dGTP+dCTP, dATP+dTTP+dGTP, and dATP+dTTP+dCTP, by Taq DNA polymerase under the reaction condition with lower Mg++ concentration in the way of MgCl2 at 0.2 mM at 74 °C or 80 °C. The non-template DNA could be completely digested by DNase I and S1 nuclease, but not by RNase A, indicating their biochemical nature as DNA molecules.

Electronic microscopy observation revealed that the non-template DNA molecules were all linear in a range of lengths detectable from 0.01 μm to 1.0 μm approximately. DNA cloning and sequencing showed that the majority of the non-template DNA represented short sequence blocks, repeated sequences, intergenic spacers and other uncharacterized nucleotide polymers.

Thus, a new DNA molecule pool rich in various genetic elements was created by DNA polymerases in the absence of DNA or RNA templates in vitro. Our study proposes a potential molecular mechanism of the biogenesis and origin of genetic information without pre-existed nucleic acid templates. Our hypothesis is that DNA polymerases could use the bound free dNTPs as an error "seed template" to form and extend the oligonucleotide chain by random and alternative polymerization. The non-template DNA polymerization could create new sources of genetic information and may have facilitated the evolution of living cells through the life history.

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Poster Board No.20

A NEW CHALLENGE: APPLICATION OF EPIGENETIC THEORY AND METHODS IN PLANT BREEDING

Epigenetics is an emergent theory to study the genetic origin of any changes of acquired characteristics, heritable traits or gene expression patterns other than changes in the underlying DNA sequence. In principle, it views how the epi-alles are originated and control inheritable "epigenetic" traits for "epi-phenotypic" variation during individual development, multi-generational transmission, environmental adaptation, evolutionary differentiation and gene flow in populations. The molecular basis of epigenetic mechanisms may involve DNA methylation, chromatin remodeling, RNA interference, sequestration of protein conformation, morphogen-induced genetic memory, paramutagenesis, and genomic imprinting. Recent evidence shows that epigenetic variations can arise at high frequency in response to environmental challenges or "genomic shocks" and contribute significantly to single and complex traits. How to integrate the epigenetic information into plant genomic mapping and breeding program is a new challenge at present. Morphogenesis assay in our study indicates that seeding pattern changes greatly in many wheat species, varieties and selections that interact to environment conditions. Polarized selection of best and worse seeds in opposite directions from single homozygous plant of wheat (Triticum aestevum L.) cv. Dexter, for three consecutive generations created two "epigenetic" lines, Dexter-L with larger seeds and Dexter-S with smaller sizes. Plant yield component analysis showed that the Dexter-L plants gained about 53% seeds/spike, 19% grams/1000k, 15% plant height, and 12% tillers/plant more than the Dexter-S plants. Genomic DNA methylation analysis showed that the DNA methylation patterns between the selected lines were quite different. Reciprocal hybridization and segregation analysis showed that the heritability of seeds/spike, grams/1000k, plant height, and tillers/plant were very high over 62% in estimate. Our research results provided evidence that some epi-alleles would be created, differentiated and fixed through epigenetic mechanisms during the polarized selection.

Based on current evidence, we propose a new technical approach potential for plant epigenetic breeding: (1) Define the optimized environment to meet with breeding objectives; (2) Select best single plants with desired traits with epigenetic agents;

(3) Select best seeds (or other traits) from the best plants; (4) Repeat steps (2) and (3) until the desired epigenetic traits are fixed; (5) Follow other standard breeding procedures to build cultivars. In addition, epigenetic markers could be developed from DNA methylation profiling and other epigenetic technologies. Application of epigenetic markers in genome mapping and marker-assisted selection will enhance plant breeding in the future. (*) Presenter: D. W. C. is an adjunct Assistant Professor

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ON-CUSTODIAL DIVORCED FATHERS: A QUALITATIVE/QUANTITATIVE REVIEW ON THE RELATIONSHIP BETWEEN FATHER/CHILD CONTACT AND EMOTIONAL WELL-BEING AMONG

Divorce is a serious issue for all members of the family. Often divorce ends with the children living with their mothers, and the non-custodial divorced fathers (NCDF) are left to face the many misconceptions and strain that reduce them to insignificant roles as fathers. Therefore NCDF have to face extra challenges to redevelop their relationship with their children. This study provided quantitative and qualitative research on the relationship between the NCDF's father/child contact and their emotional well being. In addition, the study investigated the factors that can contribute to their father/child connectedness. A total of six NCDF participated in the survey; four completed the survey and phone interview. The primary survey measured NCDF overall emotional welling and relationship with their children. Other surveys included questions related on the father's general demographics and current divorce situation. The study also implemented qualitative phone interviews, which was used to cross analyze the survey results. Similar themes and results were shared across all NCDFs. The most significant similarities were their role confusion as a father, negative perception of the legal system, and feelings of loss of their children and control over their own lives. The major weakness of the research was the lack of including fathers with full and joint custody. Comparing differences between fathers who have full and joint custody compared to non-custody and legal custody divorced fathers can increase the validity and accuracy of the results. Professionals should be aware that working with divorced fathers faces many conflict with the court system. Divorced fathers deal with a lot of grief and loss issues because they feel that they have lost their children. Much of these issues are expressed with anger. It is important for counselors to help fathers identify, accept, and resolve their source of anger.

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PROTEIN ANALYSIS OF THE ONTOGENETIC CHANGES OF THE SKELETAL MUSCLE PROTEIN IN ZEBRAFISH (DANIO RERIO)

Vertebrates like toadfish and rattlesnake have superfast muscles that can contract more than 80 times per second. These muscles occur in sound producing organs, such as the rattle of the rattlesnake. These muscles generate very little force, and therefore are hypothesized to be unsuitable for locomotion. However, we know that zebrafish larvae swim with tail beat frequency of 100 Hz for a brief time during their development (at age 3 to 5 days post fertilization). These high tail beat frequencies suggest that larval swimming muscles are able to contract like superfast muscles. As the fish grow older and larger, their tail beat frequency drops to 10 Hz, and the fish might lose their superfast fibers. The superfast muscles that we know so far have a specialized type of myosin (type XII). However previous studies found that zebrafish larvae have only muscle fiber type I and II, typical for slow and fast muscles, but not XII for superfast muscles. The main goal of my project is to identify which myosin isoforms occur in zebrafish from embryo (1 day post fertilization) to metamorphosis into juveniles (15 day post fertilization) with a special focus on whether we can find more than I and II isoforms in larvae aged 3 to 5 days post-fertilization. As the first setup in this project, an existing protocol was validated for myosin protein extraction using various sample buffers. The amount of protein present in the fish sample was analyzed using SDS-PAGE. A gradient 4- 20% resolving gel was used since myosin has a high molecular weight. The SDS gel was stained with Coomassie blue dye to visualize the protein bands. It was observed that there were various proteins bands obtained which might be myosin heavy chain, myosin light chain, actin and tropomyosin based on its molecular weight. The concentration of the protein sample will be determined by the Bicinchoninic Acid Assay (BCA). The next step would be to perform Western Blot, to blot protein myosin. Primary and secondary antibodies will be used to confirm the isoform of myosin protein present. It is expected that the amount of fast myosin protein should be less in juvenile as compared with larval zebrafish.

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INVESTIGATING THE EXPRESSION DYNAMICS OF CELL ADHESION GENES DURING GASTRULATION IN NEMATOSTELLA VECTENSIS

The phylum Cnidaria is considered to be the sister group to Bilateria and serves as an appropriate out-group to study the diversity and complexity of bilaterians. Among cnidarians, the sea anemone Nematostella vectensis has emerged as an important model system to investigate cnidarian development due to its simple body plan, developmental plasticity and utility for studying embryogenesis. The regulation of cell-cell adhesion is crucial to the molecular control of gastrulation. The levels of expression of cell adhesion genes at various stages of gastrulation in Nematostella will provide insights into the contribution of adhesion to embryogenesis and evolution of tissue morphogenesis in cnidarians as well as bilaterians. In situ hybridization will determine the spatial distribution patterns of cadherins, integrins, junctional components and other cell adhesion genes involved during gastrulation in Nematostella vectensis. To design probes to be used for in situ, the 3' untranslated region of cell adhesion genes in Nematostella was chosen to increase specificity towards the mRNA of interest. The designed probe sequences were then cloned, ligated into pGEM-T vector, purified, sequenced and used for riboprobe synthesis by in-vitro transcription. Sense and antisense probes have been successfully constructed for seven cadherin genes related to the Fat- and Flamingo- families of cadherins, as well as for integrin genes related to integrins α4, β1, β3 and β6. These will now be used for in situ hybridization to determine the different stages and locations at which the genes are expressed. Unraveling the intricate details of distribution, patterning and regulation of cell adhesion genes during morphogenesis in Nematostella will yield a rich source of information about the regulation of cell adhesion in the cnidarian–bilaterian ancestor.

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IMPLEMENTING DOMAIN-SPECIFIC LANGUAGES USING SERVICE-ORIENTED ARCHITECTURE

Implementing Domain-Specific Languages using Service-Oriented Architecture Shih-Hsi Liu, Adam Cardenas, Xang Xiong California State University, Fresno,USA {shliu, alcardenas, xangxiong}@csufresno.edu Domain-Specific Languages (DSLs) are specialized high level programming/modeling languages that are constructed for users of specific domains and have been widely used throughout the industry and academia. Commonly, DSLs are implemented using a compiler/interpreter approach. This is done by paring a DSL program that decomposes predefined keywords/constructs, with a complier/interpreter that then later invokes the assigned functions consisting of the semantics of such constructs. Programming with DSLs, although increases productivity (5~10 times) and reliability, falls short when the need for additional/removal/evolution of DSL constructs arises. Additionally, DSLs disallow multiple programming language implementations and contain limited tool support to assist DSL developers and DSL users. Service-Oriented Architecture (SOA) is a software engineering paradigm that facilitates software extension and evolution when business requirements change. A set of technology-neutral specifications and standards can assist with interoperability and integration. To facilitate such advantages and overcome aforementioned challenges, two compiler/interpreter DSLs called Programmable Parameter Control for Evolutionary Algorithms (PPCea) and Feature
Description Language (FDL), are re-implemented following SOA: The DSLs' original constructs are converted into web services. Business Process Execution Logic (BPEL) then is used to describe DSL programs which invoke the web services deployed to distributed servers. Our experiments (available at http://zimmer.csufresno.edu/~shliu/research/SOA-PPCea.html) show that the conversion for both DSLs was a success, resulting in a complete test case matching the original compiler/interpreter design. The same tools that would be used later for SOA DSL development were used in great extent for the conversion process. Compared to the restrictions of compiler/interpreter based DSLs, redesigning PPCea and FDL in a SOA environment increases robustness and scalability of DSL development. This approach also provides the interoperable ability of DSLs constructed by multiple programming languages (e.g., C# and Java), increased syntactic and semantic modularization and maintainability, and a growing array of tools and support for DSL development. In conclusion, the SOA-based DSL development is a novel approach that solved many of the current struggling issues including DSL scalability, evolution, extension and compiler/interpreter restrictions. The SOA approach also brings a new handle on DSLs with the ability of multiple language implementations and integrating the growing field of SOA tools support.

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SCHOLAR ATHLETES: EDUCATION, SPORTS, AND COMING OF AGE IN LOS ANGELES, 1940-PRESENT

The Chicana/o-Latina/o population in the United States has actively engaged in athletic activities in pursuit of a diversity of goals. For countless Chicanas/os and Latinas/os, athletic activities have provided an opportunity to develop ethnic and family pride, as well as to establish an individual identity and career, by weaving dynamic pathways to advancement through sports participation. Their undertaking of this endeavor is classed, gendered, and racialized, producing equally empowering and charged circumstances and opportunities stemming from the pressure of the power dynamics framing athletic activities. Nonetheless, among Chicanas/os-Latinas/os nationwide, these activities have created an outlet that has allowed this population to envision andpursue their goals in innovative ways. This literature review will focus on the relevance and power of athletic activities in the Chicana/o-Latina/o community of Los Angeles from the 1940s to the present. I will explore the scholarship on the trajectory of the relationship between athletic activities and Chicana/o-Latina/o pursuit of empowerment and success across race, class, gender and ethnicity.

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PRELIMINARY EVIDENCE SUGGEST THAT TADALAFIL (CIALIS®) IMPROVE HEALING IN A RAT FLAP MODEL

In a preliminary study, Sprague-Dawley rats were fed regular chow or tadalafil-containing chow at 6.6mg/kg/d and 1.1mg/kg/d. McFarlane-type caudally based skin flap was performed on the dorsum of the rats. All rats continued to receive the respective chow 10 days post-surgery. The areas of flap necrosis were measured 10 days post-surgery. Flap necrosis in rats fed with Cialis for 10 days before surgery started showing signs of necrosis early (within the first 3 days) and then stopped. The maximum necrotic tissue was approximately 23%. The rats fed with Cialis for 18 hours before surgery presented necrosis in the flaps later after surgery (after the 6th day) but the necrosis was more extensive, reaching 43% in one rat and 34% in the other.
Even though few animals were used and dosage and timing needs to be investigated further, these preliminary data suggest that treatment with Cialis during pre-surgery improves healing of McFarlane-type caudally based skin flap. More experiments are being performed to confirm these results.

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THE CONCEPT OF CLIENT-SIDE PROGRAMMING AS THE DRIVING FORCE OF COMPLEX COMPUTATION IN WEB BASED APPLICATIONS

A politician once described the Internet as a series of tubes. While politicians might only be interested in what clogs these fictitious tubes, a bioinformaticist understands, and can exploit the technology adding a new stream of wealth and knowledge to the surging resources the scientific community currently possesses. It is common protocol when creating web-based applications to use server-side coding to handle computational components, leaving the client-side to handle visualization and form processing. A point that is commonly overlooked is that client-side coding possesses all the needed components that most complex computations require. Using client-side programming to do complex computations opens a completely different set of doors to the user: computation speeds change from depending on the processing power of the server to the processing power of the user's computer. Submitted data stays local and is not uploaded to a server. There is no queue system if multiple users access the program concurrently. To demonstrate the potential of client-side programming, a simple sequence repeat (SSR)-finding software was programmed in pure client-side JavaScript/HTML. The software highlights SSRs of interest and can give flanking sequence data for effortless primer development. While client-side programming in its current state might have only selective application, it is an area less explored and is full of potential. Further research and development into this area of computational biology could lead to the next generation of web-generated analysis. The software can be utilized at www.csufresno.edu/ssrfinder.

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ON THE ROLE OF HUMANOID AGENTS AND LINGUISTIC FACTORS IN PERSPECTIVE-TAKING

People often take an egocentric perspective when describing space. However, they occasionally take an alternative perspective that accommodates a listener's position relative to the scene. When and why do individuals do this? We explored this question in a series of experiments that extend previous work on perspective-taking (e.g., Schober, 1993; Tversky & Hard, 2009). In one experiment, participants were given photographs of two objects on a table (book, water bottle). Objectively, the scene could be described from either the perspective of the person viewing the picture or from the opposite perspective (i.e., facing the viewer). To test which viewpoint would be elicited, we asked participants to describe where an object was relative to another. In one experiment, a toy humanoid robot (facing the participant viewing the photograph) was included in the scene to determine whether or not people would take its vantage point when referring to object locations, and how this inclination might vary according to changes in accompanying linguistic information. Our results indicate that people often spontaneously take the perspective of an agent-like toy when describing object locations. These findings are interpreted within the context of embodied accounts of spatial cognition and language use.

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EVALUATION OF THE USE OF INFRA-RED PHOTO-ACOUSTIC DETECTION FOR MEASURING POLLUTANT EMISSIONS FROM DAIRY FACILITIES

The San Joaquin Valley experiences some of the poorest air quality in the United States. During the summer, levels of ozone exceed both Federal and State limits on an almost daily basis. Ozone is formed in chemical reactions involving sunlight, oxides of nitrogen (NOx) and volatile organic compounds (VOCs). In most regions, VOC emissions are mostly unburned fossil fuels and are often dominated by vehicular sources, but in Central California, emissions from dairy facilities are believed to contribute substantially to the emissions inventory for this pollutant. A number of studies have investigated VOC emissions from dairies over the past five years or so, and many have used commercial instruments employing the Infra-Red Photo-Acoustic Detection (IR-PAD) technique to monitor VOC concentrations. However, there is some evidence that this technique can be inaccurate under certain conditions. The goal of this work is to evaluate the accuracy of the IR-PAD technique for emissions measurements from dairies. VOC calibration standards were placed in vials within a flux isolation chamber. Clean air was swept into the chamber where it mixed with the VOC standards evaporating from the vials. Samples were then pumped from the chamber and were analyzed using an INNOVA IR-PAD instrument. The true flux of each VOC was then determined by measuring the mass of the compound that had evaporated during the experiment. The experiments focused on acetic acid, which has been shown in previous studies to dominate the VOC emissions from dairies. Results show that the INNOVA instrument typically underestimates acetic acid fluxes by a factor of 2-3. A comparison of fluxes measured at six Central California dairies using IR-PAD and a second technique (gas chromatography-mass spectrometry) are consistent with systematically low measurements by the INNOVA. Acetic acid was also found to interfere with other channels of the INNOVA instrument, giving non-zero readings for both methanol and 2-propanol. Collectively, these data show that measurements made using the IR-PAD technique should be treated with caution when evaluating VOC emissions from dairy operations.

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SAE BAJA

The purpose of the SAE (Society of Automotive Engineers) Baja competition is to engineer, fabricate and test an off-road vehicle that would be produced by a fictitious company. In designing an off-road vehicle, aspects such as reliability, manufacturability and performance of the vehicle, need to be considered. The SAE BAJA competition is an international intercollegiate competition where approximately one hundred prototype vehicles will be ran through a gauntlet of events to test every aspect of the vehicle. Such events include acceleration, maneuverability, hill climb, rock crawl and a four hour endurance race. Prior to the actual dynamic events the vehicle will also be graded on engineering design characteristics and considerations of meeting actual customer needs. Since the vehicle will be ultimately graded by judges as a product to be produced by a fictitious company all product considerations should be considered such as reliability, performance and even cost. At the end of the competition each collegiate team will then be graded on the accumulation of points a crewed during the duration of the competition, to take place May 19th through the 22nd, 2010.

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THE EFFECTS OF AIR POLLUTANTS AND PULMONARY FUNCTION

Previous studies have shown that the San Joaquin Valley has high levels of particulate matter (PM) which may exacerbate health problems such as asthma and cardiovascular disease. It is hypothesized that following a viral infection, an individual's immune system may be weakened to the point where exposure to quinones may trigger an asthma attack. To investigate the possible link between air pollution, viral infection, and asthma exacerbation and the exposure of an individual, the levels of the pollutants or their metabolites in the urine of the subject may be monitored. Experiments were carried out by evaluating urinary quinones as biomarkers for exposure to air pollution and PM. Urine samples were collected from a cohort of 19 patients during the period from November 2007-August 2008. Daily PM mass loadings and polyaromatic hydrocarbons (PAHs) were simultaneously measured at two sites in Fresno County. Extracts were derivatized and analyzed by gas chromatography/mass spectrometry. In separate work conducted by another group, the presence of markers of viral infection is also being evaluated. Spirometer tests and daily symptom diaries are used to simultaneously track the lung function and asthma symptoms of the patients. Of the ten monitored quinines, 3 were detected to be above the limit of quantification along with five PAHs. Urinary levels of two quinines (phenanthrquinone and anthraquinine) are positively correlated with atmospheric mass loadings of the corresponding quinines monitored. Implications of these results for the use of urinary quinines as biomarkers will be discussed.

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EXTRUSION PROCESSING OF FRUIT POMACE

Fruit co-products have found very limited utilization in the food processing industry. They have been primarily used as animal feed, applied to agricultural land for soil amendment or composted and applied to farms for growing crops. Some of these disposal methods are not environment friendly, while others are costly. This study was undertaken to examine the possibility of utilizing peach pomace as a source of soluble dietary fiber in expanded extruded food products. The effects of four levels of peach pomace in blends with rice flour were investigated on the physical and rheological properties of extrudates. Blends of peach pomace and rice flour were prepared by mixing and drying to a moisture level of 13.5% (W/W). Particle size of the blends was reduced to fine flour and the moisture level was pre-adjusted to 13.5% prior to extrusion. These blends were fed to a twin-screw extruder (Clextral EV-25) at the rate of 15 kg/h. The temperature profile from feed to die end was 25°C, 25°C, 25°C, 25°C, 60°C, 70°C, 80°C, 90°C, 100°C and 120°C; the extruder L/D ratio was 40:1 and the screw speed was maintained at 400 rpm. The response variables measured were specific mechanical energy, apparent and true densities, radial, overall and axial expansion ratios, extrudate porosity and breaking strength. The apparent density for the extrudates ranged between 133.94 and 183.93 kg/m3 while the true density ranged between 1171.2 and 1254.72 kg/m3, respectively. A linear increase in extrudate porosity (85.11-88.54%) and radial expansion ratio (13.5-19.3) and a steady decrease in breakingstrength (104-50.74 kPa) were observed with increasing peach pomace level in the blends. The data clearly indicated that peach pomace can be effectively used in extruded products without compromising quality attributes. Development of an extrusion process will lead to better utilization of fruit harvest.

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A QUALITATIVE STUDY OF THREE COMMUNITY GROUPS IN THE SAN JOAQUIN VALLEY: EMERGING NEIGHBORHOOD GROUPS AND RELATIONS OF SOCIAL CAPITAL

The purpose of this exploratory study/report is to examine how some Valley residents involved\in small community groups in three different locations across the region construct the meaning of their membership as having an impact on their personal sense of health and well-being. It studies these perceptions through an examination of how the members narrate the group as contributing to their sense of belonging, community and place through a grounded theory approach. The data from 7 interviews conducted during the summer of 2009 was analyzed using a grounded theory approach, 13 categories were constructed from the data using NVivo software. These categories were then linked through relationships which produced three main themes: home and neighborhood, community and safety, and the sense of health and belonging to community. The findings were that a common ethnic identity combined with a similar history of recent migration certainly seemed to enhance bonding social capital, particularly in a low social power community. The work of community organizers with the group that had a common ethnic identity reinforced relations of bonding social capital in which residents felt they could trust and help one another. Safety issues were very present in marginalized groups with low social power. Members of these groups stated that they often felt physical fear in their neighborhoods. An organizing aim of the groups was to collectively deal with these fears, though only one showed success in developing concrete social action to change the situation. Members of the two groups that had low social power reported looking to the groups to find a community and reduce stress. Members of these groups saw them as a safe emotional space to be with others like themselves, as well as a means to reduce loneliness. This implies that the process of community organizing in areas of low social power as well as with marginalized groups is worthy of further study, particularly in the San Joaquin Valley which has a relatively high level of urban and rural poverty. The impact of migration will continue to be an issue in developing relations of social cohesion throughout the San Joaquin Valley.

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THE BRIEF SYMPTOM INVENTORY

This study is a needs assessment and outcome study of college student counseling. For many years, it was assumed that college students were protected from mental illness because of their higher intelligence and social class. However, recent studies have indicated that students have similar prevalence rates of mental illness as the general populations. This study explored this phenomenon using a standardized measure of psychiatric symptoms, the Brief Symptom Inventory (BSI). Students seeking counseling must complete a BSI questionnaire every four sessions by request of their counselor. Several hypotheses were tested. The first hypothesis was that students would show less distress than a psychiatric outpatient normative sample in terms of BSI subscale scores. Results indicated that scores on all of the BSI subscales were similar to the means of a psychiatric outpatient normative sample, and thus did not differ as expected. The second hypothesis was that students would show similar scores at the first administration of the BSI (4 weeks), but then show decreasing scores at the 8 week and 12 week administration. There was a trend for scores to decrease between the 1st and 4th administrations, but increase by the 8th administration. However, there was a large drop in the number of students (75%) between the first and fourth administrations and proportional drops in the number of students who complete the 8th and 12th administrations. In conclusion, college student counseling clients are similar to other psychiatric outpatient populations at intake. It was interesting that the scores decreased at the second administration, but increased again by the 8th. Perhaps this is because the students with the most severe symptoms remain in counseling and thus, look like they are not changing over time. Another possibility is that situational stressors increase between the fourth and eight sessions of counseling. Results have implications for monitoring change across the course of counseling and funding college student mental health research and treatment programs.

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Poster Board No.10

IMAGING CHANGES FROM PARTIAL BREAST RADIATION THERAPY BY VARIOUS APPROACHES – IORT, SAVI, CONTURA.

The purpose of this study is to report imaging changes from partial breast radiation therapy by various approaches – IORT, SAVI, CONTURA. Breast-sparing surgery (lumpectomy) followed by radiation has equivalent survival benefits to mastectomy and has become treatment of choice for women with early stage breast cancer. PBI (partial breast irradiation) is a new way to give radiation therapy to the breast after a lumpectomy. Studies have shown that PBI reduces the rate of post-radiation complications that can occur with whole breast irradiation (WBI). Retrospective review was performed on the records of 75 patients who had undergone partial breast radiation at UCSD Moores Cancer Center. All patients in the study had biopsy-proven carcinoma, either stage 0 (DCIS) or stage I or II invasive adenocarcinoma of the breast with no evidence of metastatic disease. If stage II, tumor size must be 3 cm or less. Patients have undergone a lumpectomy. 3 technologies fo r delivering PBI were utilized – IORT, SAVI and CONTURA. Technique selected is based on technical considerations and patients' preference. All of the initial and follow-up imaging studies were evaluated by board-certified radiologist. Mammograms, sonograms and MRI images were examined for the presence of skin thickening, diffuse and focal increased density, mass, lucency, and calcifications.

Skin thickening was graded as none, mild to moderate, or severe. The other categories were recorded as present or absent and were not graded.

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Poster Board No.11

DESCRIPTION OF DIABETIC PATIENTS BY NEPHROPATHY (KIDNEY DISEASE) STATUS

Introduction: Type 2 Diabetes (DM2) is a major cause of nephropathy (kidney disease) in the United States. Early diagnosis of DM2 and early intervention are critical in preventing progression to diabetic nephropathy (DN). Although some studies have shown a relationship between high glycosylated hemoglobin (HbA1c) levels and diabetic complications, HbA1c has not been demonstrated as a definitive predictor for DN. Further, Low Density Lipoprotein (LDL) and its role in DN has not been clearly demonstrated. Methods: A retrospective chart review of DM2 patients from the Family Medicine Clinic at the University Medical Center, Fresno, California, was done. Study subjects were at least 18 years old, with established DM2, as defined by ICD-9 code classification, and had a chart audit completed between 2002 and 2009. Information gathered included: DN status, HbA1c and LDL levels. Results: 1,098 records were reviewed. DN status was available in 911 patients, of which 16% (143) of patients were diagnosed with DN. Chi-squared analysis of HgA1c categories comparing patients with and without DN was not statistically significant ($P = 0.55$). 33% of patients with DN had controlled HbA1c (< 7%) compared to 37% of patients without DN. In contrast, 8% of patients with DN had uncontrolled HbA1c (> 12%) compared to 10% of patients without DN.
Chi-squared analysis of LDL categories was not statistically significant ($P = 0.35$). 85% of patients with DN had LDL levels < 130, compared to 80% of patients without DN. Conclusions: Lack of control of HbA1c and LDL levels was not associated with DN in DM2 patients. Further study is needed to investigate other factors that may contribute to the development of DN. Audit information available used a LDL cutoff of 130, other levels may show different results, such as LDL < 100 or LDL < 70.

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Structural Studies of Di-μ-chloro-bis[(η6-ethoxybenzene)chlororuthenium(II)]

X-ray crystallography was used to determine the molecular structure of an organometallic complex (i.e a metal complex with a carbon bond) that is used as a starting material for synthesizing more complicated ruthenium complexes. Crystallography data gives the bond angles and distances within a compound. It can also provide evidence for interactions between different molecules. Di-μ-chloro-bis[(η6-ethoxybenzene)chlororuthenium(II)] has been crystallized using slow diffusion of hexanes into a dichloromethane solution. This ruthenium dimer complex was prepared using 1-methoxy-cyclohexa-1,4-diene and ruthenium(III) chloride in ethanol. Single-crystal X-ray structure determination was carried out at 208(2) K on a Bruker P4 Diffractometer equipped with a Bruker APEX detector. Mo Kα radiation (λ = 0.71073 Å) was used, and the structure was solved by direct methods with Shelxs-97 and refined by full-matrix least-squares procedures utilizing SHELXL-97. The ruthenium metal atoms are at the center of the molecular structure, and they are linked to each other by 2 bridging chlorides. The face of the ethoxy benzene ring binds to the ruthenium atom. In addition, the distance between the oxygen atoms of one molecule are close enough to a hydrogen of an adjacent molecule (3.433 A) to indicate a particular type of intermolecular interaction known as hydrogen bonding.

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CHARACTERIZATION OF bis(O-Ethyl-L-Cysteinato)nickel(II): UNDERSTANDING BROADENED 1H-NMR SIGNALS

Nickel is a toxic metal that can cause cancer and other health related problems. We are trying to mimic the way nickel interacts in living systems. We use the simple cysteine amino acid to model nickel bonding sites in the body. Bis(O-ethyl-L-cysteinato)nickel(II), Ni(cysE)2, serves as a model compound for sulfur-rich zinc proteins in which the zinc of a healthy protein has been displaced by nickel. Displacement by nickel results in oxidative damage, hindered DNA repair, and cancerous growth. Proton NMR spectra of Ni(cysE)2 in various solvents show significant broadening for some peaks. Magnetic susceptibility studies confirmed our hypothesis that the broad peaks seen in our spectra is not due to paramagnetic shifts since the complex is diamagnetic in both solution and solid state. The broad signals are likely the result of complicated coupling due to a chiral carbon center and poor magnetic field strength. Variable temperature experiments may also explain broad proton signals as possible dynamic processes.

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CHARACTERIZATION OF VARIOUS REPETITIVE ELEMENTS IN PEPPER (Capsicum annuum)

Previous experiments show that repetitive DNA makes up a large fraction of the pepper genome, and contributes to its four-fold size difference with tomato. Further isolation and characterization of repetitive DNA is needed to achieve a better understanding of pepper's genetic makeup. A random genomic library was constructed from mechanically sheared pepper DNA. Twenty-seven clones, containing anywhere from 500 to 3000 basepairs, were sequenced and their sequences analyzed using BLAST, SGN Blast, TIGR, and MEME/MAST. Sequencing results indicate that pepper nuclear DNA is mostly made up of microsatellite and minisatellite repetitive elements. Some of these repetitive families include MITE, LINE, transposons, retrotransposons, non-LTR dispersed repeat CR1, LTR TY-1-copia reverse transcriptase, ribosomal DNA, and others. This information was used to further characterize repeat motifs and copy number, as well as isolate which repeat families occur within members of the Solanaceae family using a PCR based approach.

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A COMPARISON OF FACIAL COMPOSITE LIKENESS MEASURES

Computer-generated facial composites are often used by law enforcement to assist in suspect apprehension. However, there is a dearth of research on the effectiveness of software in creating identifiable composites. Previous research has used both lineup selection and individual characteristic scales to assess the accuracy and subsequent utility of facial composites. The purpose of this study was to assess composite/target similarity using two established methods and investigate the relationship between these measures. Using facial composites created with FACES 3.0 composite software, participants either selected a target face from a five-photograph lineup or rated the similarity of twelve individual characteristics (e.g., age, hair, friendliness, intelligence). Results indicated a positive correlation between the overall proportion of picture lineup selections and the mean of the individual characteristic scales, $r(78) = 0.65$, $p<.01$. This correlation extended to each of the twelve individual characteristic.
These findings suggest that these characteristics are all useful in indicating the likeness of a facial composite to a target face. Implications for future research on the efficacy of facial composite software are

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THE CREATION AND VALIDATION OF THE LONELINESS ENGAGEMENT SCALE

Lonely individuals are typically thought of as shy, withdrawn people who lack social skills and become anxious in social situations. However, a new theory postulates that there is a second type of lonely individuals who are social and friendly, but do not feel emotionally close to others. Consequently, the Loneliness Engagement Scale (LES) was conceived to differentiate between two types of loneliness: hyperengaged (that is, people who are overly demanding and clingy in relationships, thereby causing a cycle of loneliness) and disengaged (that is, people who are shy and withdrawn because of an extreme fear of rejection in any social setting). The current study involved the creation and construct validation of the LES by confirming its proposed two factors, assessing its internal consistency reliability, and assessing its relationship to other measures of loneliness, self-esteem, rejection sensitivity, social anxiety, and social skills. Five steps were taken to ensure the creation of a psychometrically sound scale: 1) item pool creation, 2) subject matter expert consultation, 3) focus group consultation, 4) pilot testing of items, and 5) construct validation of the final scale. Factor loadings indicated that the LES consisted of two main factors: disengaged loneliness and hyperengaged loneliness. The LES was also found both reliable and valid, with very good internal consistency and significant correlations between the two loneliness types and other measures of loneliness, self-esteem, rejection sensitivity, social anxiety, and social skills as predicted. Overall, the LES was a successful creation which introduces a unique and previously nonexistent measure of loneliness into the literature. Results also demonstrate the existence of the two loneliness types as conceptualized. With this new scale and information, lonely individuals can be identified by type and intervention programs can be created or revised accordingly.

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TEMPERLEY-LIEB ALGEBRA REPRESENTATION OF BRAID GROUPS

A braid is a set of strings, all of which are attached to a horizontal bar at the top and bottom. Each string intersects any horizontal plane between the two bars exactly once. We can always pull the bottom bar around and glue it to the top bar, so that the resulting strings form a knot or link, called the closure of the braid. One of the primary goals in knot theory is to distinguish between different representations of the same knot or link. This may be done using various knot invariants, which are some "quantities" that remain the same for equivalent knots, regardless of how they are diagrammed. The Jones polynomial of a knot is such an invariant, whose discovery generated immense excitement among knot theorists and huge developments in topology and related areas. Since a closed braid represents a knot, one can study braids to gain information about knots. Braids form a group under the operation of concatenation, and in this project we focus on the study of the braid groups and their representations. We consider the oriented version of the Jones polynomial, and show it can be derived from a representation of the braid group into the so-called Temperley-Lieb algebra, via a geometric oriented form of it. In order to obtain this oriented description of the Temperley-Lieb algebra, we first construct the oriented version of the Temperley-Lieb category, and show that it can be given in terms of generators and relations. Then we define a representation of the braid groups with the oriented
Temperley-Lieb category and show how we can recover the Jones polynomial via this new construction.

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OPTIMIZATION OF DATA TRANSFORMATION FOR CHROMATOGRAPHY USING PETROLEUM DISTILLATES

This research seeks to further explore ways to improve the performance of gas chromatography as a tool for identification of complex mixtures through chromatogram comparisons. Previous work at CSU Fresno by Seth Yates used gas chromatography in this manner to correctly identify evaporatively weathered samples of gasoline using a preprocessing algorithm on the chromatograms before computing similarity scores. Current research seeks to improve and expand the preprocessing algorithm to account for in-lab variability due to instrument-to-instrument variation and sampling amounts of petroleum distillates. Rather than focusing on individualizing products, identification of product specific marker compounds, this projects is focused on reducing instrument-to-instrument variability so that an expanded library can be applied to chromatograms collected in different laboratories and on different instruments in the same way that the National Institute of Science and Technology (NIST) libraries for mass spectra are currently used. A collection of reference and test data has been collected under different instrument conditions including variation of the temperature program, flow rate, and injection concentration on an Agilent 7890 Gas Chromatograph – 5975 Mass Selective Detector to simulate different instruments. The variation in peak separation and patterns for gasoline, kerosene, and an n-alkane mixture has been examined to determine whether it interferes with chromatogram comparisons. Work is continuing to evaluate the potential of data preprocessing algorithms such as retention indexing and binning to address the variations observed in this test data set.

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COLLEGE STUDENT ATTITUDES TOWARD MENTAL HEALTH TREATMENT

The objective of the study was to look at college students' attitudes toward seeking services for depression before a campus wide mental health education effort to increase awareness of depression. Students in Introductory Psychology classes took a questionnaire at the beginning of a class meeting and received "research credit" for participation. The questionnaire evaluated whether students had learned about mental health issues via a "screening event," classes, or their own personal counseling.

There were questions about the stressors of college life and both positive and negatives techniques for managing stress with a question about how well the stress management techniques were working. There were questions about the likelihood of seeking counseling and taking medication for emotional problems and their awareness of the availability of personal counseling and mental health services on campus. Finally a question evaluating mental health stigma was included. Four hundred twenty-six students completed the questionnaire. The mean age was 18.7 (SD 1.5). Twenty percent of the students had sought some sort of treatment for stress/emotional problems before completing the questionnaire. In terms of knowledge of available services: 50% knew that "free personal counseling" was available on campus, but only 13% knew that the campus offered outpatient psychiatry. As a group, students reported that they would "possibly" seek counseling if they had a personal or emotional problem ($M=4.63$, S.D. 2.10). Students who endorsed knowing about campus counseling services were more likely to report using these services ($M=4.93$, $S.D.=2.21$) than were students who did not know about the services ($M=4.34$, S.D. = 1.94) ($F(1,424) = 8.61$, $p<.005$). As a group, students "completely" agreed with the statement that "Emotional well-being is as important as physical well being" ($M=7.88$, S.D. 1.58). In conclusion, about half of the students in our sample were aware of free personal counseling on campus and all of the students were somewhat open to using these services. Also, students seemed to understand that mental health is as important as physical health. However, there seemed to be a difference between willingness to seek needed services for oneself and endorsement of this positive attitude about mental health. These findings may reflect that students are willing to support other people with mental illness, but still have enough stigmatizing attitudes toward mental illness that they would not seek services themselves.

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OPTIMAL METHODS OF ICLICKER USE IN A CLASSROOM SETTING

This study examined how the use of an electronic classroom response system (i.e., iClicker) affects memory retention over a period of seven days. Twelve multiple-choice questions on current classroom material were presented twice, spaced by a one-week interval. Two identically-taught cognitive psychology classes were randomly assigned to use the iClicker system on Week 1 or were simply presented with the questions and answers. Both classes used the iClicker system on Week 2 to respond to the same questions and answers in a different order from Week 1. The findings showed a significant increase in proportion of correct responses within the clicker-use condition after one week. Unexpectedly, the mean proportion correct on Week 2 was statistically higher for the group that did not use the Iclickers on Week 1 than the group that did. The findings suggest that classroom response systems may sometimes be non-optimal in facilitating retention.

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GEOSPATIAL WINE GRAPE QUALITY MODELING FOR OPTIMUM SAMPLING STRATEGY

Spatial variability in wine grape vineyards is major limiting factor in achieving maximum fruit and wine quality. Wine grape growers and winemakers have recognized this for decades and have devised a wide range of management practices to overcome this problem. However, variability in vineyards is inevitable posing lower economic returns and management difficulties. The use of new technologies to increase our awareness and understanding of variability in wine grape quality across a vineyard, although not unexpected, is providing new insights and suggesting new strategies to growers and winemakers alike in their efforts to produce better fruit and high value wines. In this study, an optimum sampling protocol was developed for determination of sampling sites required for mapping wine grape quality parameter, anthocyanin content, in order to facilitate feasible data collection and to quantify spatial variability of anthocyanin with minimal sampling resources in differential harvesting programs.

In this research we collected samples from two vineyards and geostatistical techniques focusing on spatial structure of a variable, that is, the relationship between a measured variable at a given location and that same variable measured at location some distance away from it. And krigging methord was used to develop the interpolated maps for coming up with results.

Anthocyanin dataset from Twin Creeks 2006 and Merjan 2007 were analyzed spatially using geostatistical techniques in the ArcGIS environment, more specifically, geostatistical analyst extension. The spatial dataset has approximately a maximum of ten samples per acre, which was used as a reference for analysis of 3, 5, and 7 samples/acre for both Twin Creeks 2006 and Merjan 2007. Overall, Strategy I did not yield predictions as good as Strategy II due to the variability possible in sample sites affecting predictions, especially on the lower samples/acre. The results of the study clearly demonstrated this phenomenon of poor predictions with 3 samples/acre in Strategy I irrespective of the vineyard. At the same time, 7 samples/acre predictions of the Strategy I was fair based on the cross validation statistics and in comparison with the ~10 samples/acre. However, Stratregy II was the best in terms of predictions as both the 5 and 7 samples/acre dataset across vineyards resulted in predictions complying to the requirements of the two fruit quality coding differential harvesting programs despite the fact that 5 samples per acre is not recommended for any more than two fruit quality coding programs.

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THE EFFECTS OF FIRE AND FOREST THINNING ON SEED WEIGHT OF CONIFERS IN THE SIERRA NEVADA, TEAKETTLE EXPERIMENTAL WATERSHED

Research shows that fires are important for the circulation of nutrients, clearing of underbrush and establishment of species, and pivotal for the opening of serotinous seeds, among other things, in terrestrial habitats. In this study, we examined the effects of fire coupled with either understory or overstory thinning on seed weight of coniferous tree species in the Teakettle Experimental Watershed, located in the Kings River Watershed of the Sierra National Forest. A 2x3 factorial design with three replicates each (18 total) of fire (control) or no fire, and understory thinning, over story thinning, or no thinning (control) was implemented at the test site in the summer of 2000 and 2001 for the control plots, and in the summer of 2001 and 2002 for the experimental plots. The data used for this experiment were gathered during the first two weeks of September 2008, and weighed to the nearest 0.0001g. Data were analyzed using Analysis of Variance (ANOVA). There were no significant effects seen on seed weight in this seed year. Future studies will extend analysis to examine seed weight of species to previous and future years.

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TRAINING A FISH TO PERFORM VOLUNTARY TURNS FOR HIGH SPEED VIDEO RECORDING AND KINEMATIC ANALYSIS

Fish employ different swimming styles in different situations: constant-velocity cruising, for example, or sudden starts for prey capture and escape. The kinematics and hydrodynamics of steady swimming have been studied extensively. However, so-called unsteady movements, during which fish change their swimming speed and direction, are more difficult to measure and analyze. Unsteady maneuvers include escape responses (which can be provoked in the lab by a visual or auditory stimulus) and voluntary turns. The aim of our study is to explore the mechanisms that fish use to turn. We expect that turning performance depends on body shape, turning mechanism, and motivation (spontaneous versus reflexive). The main goals of this project are to (1) train a fish to perform voluntary turns, and to (2) optimize the setup for high-speed recording and video analysis. Our current focus is the tilapia (Oreochromis mossambicus), a tall body morph with large dorsal and anal fins. We selected a cooperative individual and trained him to swim through hoops. The fish was trained by positive conditioning with a feeding probe, first to swim through one hoop, and then through two. By arranging the hoops along various points of an arc, we encouraged the fish to turn through predetermined angles and radii. However, after filming it became obvious that significant data could also be obtained as the fish spontaneously turned through the hoops and around them (the trained fish has a tendency to swim in the area where the hoops are positioned). The fish now routinely performs voluntary turns that have been filmed from two perspectives with high-speed video. Of particular interest are small-radius turns that superficially resemble the reflexive escape response, which we have also filmed. It is hoped that quantitative comparison of these recordings will reveal fundamental differences in the turning mechanisms.

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PHOSPHORUS FLAMETHROWER: ALLOTROPE DEMONSTRATION

Chemical education is an active field of research at Fresno State. A demonstration for descriptive inorganic chemistry, which displays the unique behavior of a familiar element, phosphorus, while at the same time making chemistry more accessible to the introductory student, was developed. Allotropes are different arrangments of atoms of an element. Common examples are the allotropes of carbon which are diamonds and graphite in pencil lead. These different arrangements result in different physical and chemical properties. The common allotropes of phosphorus are black,red, white and violet. The reactivity of the allotropes can be related to the structure of the allotrope. In this demonstration, small amounts of the white phosphorus allotrope are synthesized from red phosphorus that can be obtained from a matchbook. White phosphorus is exposed to oxygen in the air using a disposable pipet and large pipet bulb to yield an attention-grabbing flame. This simple and effective demonstration highlights two of the common allotropes of phosphorus and their differences in reactivity.

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ZOLEDRONIC ACID (Zometa®) PREFERENTIALLY INDUCES CELL DEATH IN A BONE METASTASIZING BREAST CANCER CELL LINE

Bone is the most common organ for tumor metastasis in breast cancer patients. Currently,bisphosphonates are a main-stay of cancer treatment known to reduce and/or delay the skeletal related events of malignancy by impairing osteoclast-mediated bone resorption. The purpose of this project was to define differences between the breast cancer cell line, MDA-MB-231, and an osteotropic clone, MDA-231BO, in response to the bisphosphonate, zoledronic acid (ZA). Results demonstrate that MDA-231BO cells are more sensitive to ZA cytotoxicity and the salutary effects are both media- and calcium-dependent, as elevating exogenous calcium levels increased ZA cytotoxicity. To investigate possible mechanisms of ZA-induced cell death, total RNA, whole protein lysates, or mitochondrial-enriched fractions were isolated from treated MDA-231BO cells and compared to non-treated controls. Using semi-quantitative RTPCR, ZA-treated cells exhibited a down-regulation of CYR61, a matricellular protein over-expressed in highly invasive cancers while using a combination of 2D-PAGE separation and MALDI-MS/MS, we report the identification of a small subset of differentially-expressed proteins including an up-regulation of antiangiogenic proteins. Taken together, our results provide a better understanding of the molecular mechanism associated with ZA exposure in osteotropic cancer cells.

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NEW INFRASTRUCTURE FOR PANAMA TO AID RURAL FARMERS AND PROMOTE ECONOMIC DEVELOPMENT

The Republic of Panama is an isthmus in Central America, connecting North and South America. Panama is home to the Panama Canal, which has a large stake in the country's success. Panama is a less developed country with 10,000 farmers. Because a majority of Panama's GDP is dependent on the Canal, banking systems, and duty free zones, the focus on infrastructure in indigenous areas has become absent. This study proposes to focus on the economic development needs of indigenous farmers in the autonomous western region of Panama because this is where the poorest farmers are. New infrastructure will address the issue of rural poverty and allow for shipment of crops. Data was collected through the use of internet websites, scholarly journals, and books. To better understand Panama's economy and lifestyles, information examined includes physical geography, agricultural and food systems, people, economy, and the government. Once the collected information was analyzed, a development plan was assembled to assist Panama with economic development. While skyscrapers, billboards, and bustling streets are found within the major cities of David, Colon and Santiago, the remainder of Panama is heavily forested, has rolling hills and various mountain ranges. Fifty-seven percent of Panama's land is dedicated to forest while the remaining 43% is broken down as follows: 20% is devoted to permanent pastures, 7% is for arable land, 2% consists of permanent agricultural crops, and14% is used for various other purposes (roads, homes, etc.). While Panama is a sophisticated country with many highways connecting not only Panamanian cities, but continents as well, there are not enough roads in rural sections of Panama to enable swift and safe transportation of agricultural commodities and foodstuffs to provide an adequate lifestyle for farmers. And of the 6,996 miles of roads that do exist, only 2,350 miles are paved. Three-fourths of all roads are in terrible condition due to the lack of maintenance and weigh stations. This project proposes construction of secure and stable roads that will run north, south, east, and west to connect all rural areas to large cities. The newly paved roads will be equipped with several weigh stations to ensure strict cargo weights are followed. The construction of new infrastructure will help rural farmers with the transportation of their crops to local farmers' markets and to large cities for exportation. In addition to the introduction of newly paved roads, the opportunity of growing more crops per acre will be introduced to farmers in hopes of improving production and land use, providing more capital, and raising income of rural households. Maintenance of roads will be presented to the public through user-friendly guidelines to ensure safety and the roads' longevity. The cost of all activities would be approximately $2 billion.

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EFFICACY OF PHYSICAL THERAPY INTERVENTION ON FEAR OF FALLING IN COMMUNITY-DWELLING OLDER ADULTS

Background: Older adults are at greater risks of falls which can potentially lead to severe medical complications. U.S. population is aging as the baby-boomers will reach retirement age as earlier as 2011. According to Iglesias et.al., the main burden associated with unintentional falls in the elderly, measured as impact on health-related quality of life is due to fear of falling (FoF) rather than actual falls or their sequelae such as fractures. Tinetti et.al. defined FoF as low perceived self-efficacy at avoiding falls during essential, non-hazardous activities of daily living. Thus, the fear is a psychological pathology with physical manifestations. Purpose: The purpose of this evidence-based practice study was to determine the effect of Physical Therapy related interventions on FoF in community-dwelling older adults. Hypothesis: Exercise, a common Physical Therapy intervention, has been shown to influence psychological wellbeing. We thus, hypothesized that physical therapy-related interventions will effectively reduce FoF. Study design: A systematic review with meta-analysis of clinical studies examining physical therapy interventions. Methods: Exhaustive literature search was conducted with PubMed, CINAHL and Cochrane. Inclusion criteria for the clinical studies were: 1) subjects being community-dwelling, independent individuals over the age of 60 and 2) studies using a clinically established FoF outcome measure such as ABC or FES. Validity of the selected clinical studies was determined using the PEDro and the Jedad Scales. A mixed method approach was undertaken using narrative and fixed effects meta-analysis. Results: Four Randomized Controlled Trials met the inclusion and exclusion criteria. Methodological quality of the studies varied from moderate to high. Individually, the studies showed an effect size ranging from .08 (small) to .75 (medium-large). There was a weighted mean effect size of 0.32 ± 0.1; indicating a moderate level of efficacy. Conclusion:
This study found that Physical Therapy interventions help reduce the fear of falling.

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A CANDIDATE GENE STRATEGY TO IDENTIFY RESISTANCE GENES IN PEPPER TO PHYTOPHTHORA CAPSICI

Phytophthora capsici is a deadly soil-borne disease that is responsible for the epidemics of bell and chile pepper root rot and crown blight. It also affects tomato, cucurbit crops, and many other species. There is no major commercial variety of pepper that shows resistance to a majority of pathogen isolates. Currently, our lab is investigating several resistance genes that allow pepper to fight the disease. My project investigates the genetics of resistance against P. capsici through the use of a candidate gene strategy. A candidate gene is a gene suspected of being involved in the expression of a particular trait. I am using previously cloned resistance genes from other members of the Solanaceae family as candidate genes for genes that confer resistance to P. capsici. PCR amplification of DNA from our two mapping parental plant lines can detect differences, or polymorphism, between the two lines. Analyzing these polymorphisms in the progeny lines will indicate where the candidate genes are located. After conducting multiple searches on GenBank for potential candidate gene DNA sequences, primers were developed that will amplify those sequences. Polymorphisms between parental lines are currently being sought. Polymorphic candidate genes will be placed onto the pepper molecular genetic linkage map. If any map to the same location as any of our previously identified resistance genes, then there is a high likelihood that the candidate gene actually confers resistance to P. capsici

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Poster Session III
Poster Board No.4

DEVELOPMENT OF TRANSGENIC TOBACCO PLANTS CONTAINING A NEMATODE XYLOTRANSFERASE RNAI GENE: A NOVEL APPROACH FOR PLANT PARASITIC NEMATODE CONTROL

Plant parasitic nematodes are a major source of agricultural destruction and cause an estimated $125 billion in annual agricultural damage. Currently, the most popular methods of controlling these destructive parasites are by means of toxic chemical nematicides; many of these chemicals such as methyl bromide are being currently phased out due to environmental and health hazards. Rather than creating new toxic compounds to combat these pests, a novel, and sustainable approach must be explored. This project will approach this ever-present problem by creating a nematode-resistant plant system using recombinant DNA technology. This novel system will be first tested by inserting a gene into tobacco plants that will form a double-stranded RNA (dsRNA) molecule in the form of a stem loop upon transcription. The dsRNA, once ingested by the plant parasitic nematode Melidogyne incognita, will trigger the process of RNA interference (RNAi) and silence an endogenous nematode xylotransferase gene. This project also aims to express the dsRNA only in the root system of the plant because this is the area in which the parasitic nematodes live; this will be accomplished with the insertion of root-specific promoter sequences into the gene construct. Due to its length, this project will be divided into several steps. Step one, which involves in silico research and development of the gene construct, has already been completed. Step two, which is currently underway, involves cloning the gene construct into a plant transformation vector (pCAMBIA1301), which will express the gene once inside the plant. The next step of the project will be to conduct Agrobacterium-mediated transformation of the gene construct into tobacco plants and test for its effectiveness in stopping nematode infestation.

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Poster Board No.5

PLACEMENT OF DEMOGRAPHIC QUESTIONS ON SURVEY ITEM NONRESPONCE

Placement of Demographic Questions on Survey Item Nonresponse Presentation Preference: Poster Nicole Arbabzadeh* and Jennifer L. Ivie, Ph.D. California State University, Fresno 1524 E Via Estrella Dr. Fresno, CA 93730 (559) 349-2906 nicolesa1121@comcast.net Undergraduate Student There have been few studies conducted on demographic placement (beginning or end of a survey) and its effects on response rates. These studies have not utilized college students who are a population often examined in the social sciences. Furthermore, research has been limited in regards to demographic placement, sensitivity of these items, and the sensitivity of the survey questions. Experts in survey methodology suggest guidelines on demographic placement, yet their advice is based purely on common sense rather than on empirical evidence. This study empirically tested item nonresponse in relation to the placement of demographic questions, sensitivity of the demographic questions, and sensitivity of the survey questions via mail administration. Out of 256 envelopes handed out, 157 participants returned one of eight survey conditions. Item nonresponse was assessed by the total number of times that a participant chose the option "Refuse to Respond". For overall item nonresponse, there was a significant three-way interaction between demographic placement and sensitivity and survey sensitivity. In general, item nonresponse on the non-sensitive survey was higher when sensitive demographics were used, regardless of their placement. However, item nonresponse on the sensitive survey was highest when non-sensitive demographics were placed in the front and lowest when they were placed in the back. There was not much difference due to demographic placement in item nonresponse on the sensitive survey when the demographics were sensitive. Overall, demographic placement seems to matter when the demographics are non-sensitive in nature and the survey is sensitive in nature. However, when the survey is non-sensitive in nature, sensitivity of the demographics is more important than placement.

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EXTRACTION EFFICIENCY OF METHAMPHETAMINE IN FORENSIC CASEWORK

It is the job of the forensic analyst during the analysis of controlled substances to correctly identify unknown substances though a series of chemical color tests and analysis using the Gas Chromatograph/Mass Spectrometer (GC/MS). By using the GC/MS to identify retention times and mass to charge ratios of the ions an accurate depiction can be made as to what the unknown sample originally contained. There are many methods for extracting a controlled substance such as methamphetamine that will prepare the sample for GC/MS analysis. However, some may optimize for selectivity of a specific compound at the expense of extraction efficiency. Selecting an extraction method based on performance criteria requires that we know the relative efficiencies of potential extraction methods. Several factors influence the solubility and therefore the extraction of a chemical. Influences on liquid-liquid extractions can come from the choice of organic and aqueous phases, pH of solution and concentration of the chemicals as they interact to reach equilibrium. To better understand these interactions for amphetamines encountered in forensic casework, a case study using methamphetamine was performed where the quantity of methamphetamine in different liquid-liquid extractions was compared.

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EYEWITNESS MEMORY FOR FACES AT TACTICAL SPEEDS

Although much research has addressed eyewitness memory for faces, little has addressed eyewitness memory at the "tactical speeds" typical of real world crime situations. This was the subject of the present experiment, in which 75 college-aged respondents participated with proper informed consent and debriefing. A photograph of a crime scene was derived from a simulation used in SWAT training. This scene depicted a man aiming a handgun in the direction of a female "victim." This scene has been successfully used in previous series of experiments in our laboratory. Twenty-five respondents participated in each of three conditions, varied as to scene exposure time. The exposures were the five-second period used in previous research in this program, a two-second interval, and a 0.5-second interval; these latter two exposure times effectively bracket the typical duration of a violent gun encounter according to law enforcement experts. After a ten-minute retention interval, respondents were asked to identify the perpetrator, if present, from a "six-pack" lineup typical of current police usage. Instructions and procedures were identical to those used in actual law enforcement settings. On average, accuracy was poor. Across exposure times, respondents generated only 13% as many correct as incorrect identifications. Surprisingly, exposure time made no significant difference to this pattern of results. However, this finding is consistent with theoretical considerations which emphasize the parallel, "gestalt" characteristics of face processing, as opposed to the more time-dependent, "feature-intensive" dynamics characteristic of the cognitive processing of inanimate objects. Additionally, the 5s exposure time yielded significantly more failures to choose anyone in the lineup than did the shorter exposures. This result indicates the importance of cognitive mediation, as facilitated by longer exposure time, in the dynamics of eyewitness memory. Results are further discussed in terms of the necessary integration of cognitive science and modern police and forensic psychology.

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COMPARING DIFFERENT RADIOLOGICAL MODALITIES FOR EVALUATING BREAST IMPLANT COMPLICATIONS

Introduction: Complications after breast augmentation or reconstruction with implants include abscess and hematoma. Associated symptoms of pain, enlargement and asymmetry of the breasts may be confused with other underlying problems. Ultrasound (US) has been the method of choice for diagnosing these two complications. However, some medical centers have reported using computed tomography (CT) or magnetic resonance imaging (MRI) for making such diagnoses. Methods: We will briefly review the technical aspects of the three radiologic modalities in relation to abscess or hematoma detection in the breast. We will conduct a literature review to compare the efficacy of the three radiologic modalities in evaluating for abscess or hematoma after breast implants. Results: US uses high frequency (5 to 7 MHz) transducers to capture real time tomographic images and evaluate for fluid collection in the breast. CT uses ionizing radiation to acquire its images, while MRI uses non-ionizing radio frequency signals, under at least 1.5 Tesla, to visualize its images. MRI provides the best soft-tissue differentiation among the 3 modalities. In addition, different pulse sequences can be utilized in MRI to provide high resolution image contrasts, based on the different chemical sensitivity under magnetic resonance. MRI can therefore differentiate between simple fluid collection, hemorrhagic fluid collection and pus accumulation. Most of the studies focused on US assessment of postoperative complications after implant placement. It appears that US is more user dependent and can pose more challenge in differentiating seroma versus hematoma relative to CT or MRI. Early phase hematomas caappear as complex cystic mass while late phase ones can be hypoechoic in US which are hard to differentiate from subcutaneous fat. While either CT and MRI will provide much better spatial resolution than US, MRI provides the best contrast resolution for additional diagnostic accuracy.

On the other hand, CT costs at least two times, and MRI costs at least three times that of an US. The additional costs may not always translate into information that will affect final decision for surgical intervention. Conclusions: US, CT and MRI can all be used to evaluate complications such as abscess and hematoma after implant. The relatively inexpensive US is generally effective in making diagnosis but requires a skillful sonographer to make proper interpretation. While CT and MRI provide much better spatial resolution than US, their costs may be prohibitive in certain instances. Hence, the choice of imaging modality for definitive diagnosis of hematoma or abscess has to be made according to the clinical situation.

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THE ANALYSIS OF BOWLING FOR PLAYERS WITH DIFFERENT TECHNIQUES

The purpose of the study was to investigate the sport of bowling and the different techniques used to knock down the greatest amount of pins. The research involved two factors: position for throw and amount of curve applied to the ball. The method of study was done via hands-on experimentation. Two people participated in the study. Each person had a total of 20 bowling attempts with 9 possible combinations to utilize. All attempts were random. Furthermore, the data was collected and analyzed by using the two-way analysis of variance method and Microsoft Office Excel software package. The results of the study showed significant evidence from the data to support that there is a difference for knocking down more pins with specific factors applied.

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DNA EXTRACTION FROM CALCIFIED TISSUES: A COMPARATIVE STUDY USING HYDOXYAPATITE AND CARRIER RNAS

The extraction of DNA from calcified tissues often presents a variety of problems that prevent usable DNA profiles from being developed; including contamination, degradation, and PCR inhibition. This study compared the quality and quantity of DNA extracted from calcified tissues, assessed by short tandem repeat [STR] and mitochondrial DNA [mtDNA] typing. Human bone samples were subjected to four different treatments: bone powder with PCIA alone, bone powder with PCIA and cRNA, isolated HAp fraction with PCIA alone, and isolated HAp with PCIA and cRNA. STR and mtDNA analysis was employed on each of the four samples respectively; furthermore each process was tested in triplicate to ensure quality results. Samples were ground under liquid nitrogen and subjected to de-calcification. HAp crystals were obtained by isolating a small portion and removing the collagen matrix with bleach. The Real-Time PCR and Quantifilier® Human DNA Kit were used on STR samples following purification. Samples were then amplified and genotyped using an AmpFlSTR® Identifiler Kit and an ABI® 310 Genetic Analyzer. MtDNA samples were amplified using PCR and quantified using an Agilent® 2100 Bioanalyzer. The 310 Genetic Analyzer using a Big Dye Terminator® Kit was employed on all samples for sequence determination. The addition of cRNA showed at least a two fold increase in DNA recovery over non-cRNA containing samples. DNA quantities gathered from the HAp methods were slightly lower (≈75%) than the standard method. However, the quality of DNA as assessed by the total number of allele calls made was determined to be higher. These results indicate that DNA attained from HAp crystals are in a better state of preservation and may be a valuable source when working with highly degraded samples.

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THE INTERACTION BETWEEN ALZHEIMER'S DISEASE-RELATED PROTEINS, APP AND XII

Introduction Alzheimer's disease (AD) is hypothesized to be caused by the accumulation of a polypeptide derived from the proteolytic processing of the transmembrane Amyloid Precursor Protein (APP). Mint/X11 a family of neuroadaptor proteins that mediate docking and fusion of synaptic vesicles binds to APP, via its phosphotyrosine interaction domain (PID) and retains the complex in the endocytic pathway. This process prevents the recycling of APP back to the cell surface, leading to a decrease in levels of amyloid beta peptide, Aβ40 and the neuritic plaque forming Aβ42. For APP to be processed X11 must be expressed at sufficient levels; overexpression or silencing of X11 prevents Aβ formation. Thus manipulating levels of X11 expression could possibly diminish the processing of APP to neurotoxic Aβ plaques. Methods I have qualitatively studied the strength of the interaction between APP and X11α (an X11 isoform) using complex immunoprecipitation (co-IP) and Western blot to verify the interaction between these two proteins. The pluripotent NTera 2/cl.D1 (NT2) cells cloned from human testicular embryonal carcinoma were transiently transfected with myc-tagged X11α and APP. The cell lysate from the double transactions were co-IP'd using reciprocal antibodies (IP with APP and then detect X11 and vice versa). Results Reciprocal Co-IPs showed the interaction between APP-X11α was qualitatively determined to be robust, based on resistance to added detergent to the cell lysates. Conclusion and Future Directions Since there is a strong interaction between the two proteins, the proteolytic processing of APP to Aβ polypeptides can be prevented thereby reducing AD. Further studies will involve a quantitative test of the interaction using fluorescence-tagged proteins and Fluorescence Energy Resonance Transfer (FRET). In FRET, proteins can be visualized only within 5 nm of each and therefore can be said to be strongly interacting.

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IDENTIFYING MATING TYPE OF PHYTOPHTHORA CAPSICI ISOLATES

This project involves determining the mating types of roughly eighty different isolates of Phytophthora capsici and eventually mapping their mating type locus on an existing P. capsici genetic linkage map. When opposite mating types are placed together in the same Petri dish, a successful mating causes formation of oospores. For example, if one of the unknown isolates forms oospores when crossed with A1, then the isolate must be of opposite mating type, A2. Isolates were crossed with known mating types A1 and A2 on 60 x 15 mm polystyrene Petri dishes on clarified V8 media. The dish was divided by a line down the middle; a plug of known mating type was placed on one side, and the plug of the unknown isolate on the other, spaced 1cm apart. The control crosses were: A1 x A1, A2 x A2, and A1 x A2.The crosses were wrapped in aluminum foil and set in a 25°C incubator. After two weeks, a sample of mycelium that had grown midline between the two plugs was taken and was prepared on a microscope slide, then examined under a light microscope. The crosses were then incubated another two weeks and more mycelial samples were taken. No oospores were seen on any of the controls after two weeks. After a month of incubation, there were oospores seen in the A1 x A2 control. There were also oospores seen in some, but not all, of the other P.capsici crosses with both, A1 and A2 mating types. More crosses must be made to ensure the highest level of certainty of the mating type of each of the isolates. Information from isolates for which mating type can be identified will be used to map the mating type locus.

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IMPROVING IPM OF HOUSE FLIED AT COMMERCIAL DAIRY OPERATIONS THROUGHT PEST MONITORING AND DETERMINATION OF NUISANCE THRESHHOLD

House flies are a common nuisance pest associated with animal agriculture operations such as commercial dairy operations and other confined animal operations. There are no standardized methods for accurately measuring house fly abundance so that an IPM (integrated pest management) program can used to effectively reduce the population. The objective of the study was to evaluate the performance of spot cards, fly tapes, insecticide baited traps, and Alsynite traps as a means to monitor house fly numbers at commercial dairy operations. House fly abundance was measured at three Central California Dairies from June through August. At each dairy ten spot cards, five bait traps, and five Alsynite traps were placed at different locations around the facility to provide full coverage of the dairy. Five fly tapes were also placed on at least two sides of a milking parlor. Spot cards are an indirect count of resting flies that leave behind regurgitation and defecation spots. Monitoring devices were collected weekly and captured flies counted and identified by species and sex as well as spots on the cards counted. Spot cards and bait traps were similarly effective for a wide range of fly numbers. Fly tapes proved to be ineffective due to the harsh summer environmental conditions, which lead to an 18% failure rate. Bait traps were effective most of the time, however flies do build genetic resistance to the bait. Spot cards and bait traps provided the best measurement of fly populations on the dairies. Spot cards required less effort and cost to deploy and with a computer aided spot counting program it is the recommended method. No matter the method utilized, dairies cannot be compared to one another; instead it is the change in the count over time at each facility that matters.

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CHARACTERIZATION OF OXAZOLIDINE BYPRODUCTS IN METHAMPHETAMINE LABORATORY CASEWORK

In clandestine laboratories, ephedrine or pseudoephedrine is the main starting material used in the synthesis of methamphetamine. Ephedrine is often present in derivatives known as oxazolidines. Reporting of ephedrine impurities is important because it can uncover information on the synthetic methods used to produce the drug. There is a lack of reference data and proven structures of these oxazolidine compounds. Industry criteria require published reference data before these compounds can be identified and reported. Oxazolidines of ephedrine with acetone, formaldehyde, benzaldehyde and acetaldehyde have been prepared from three ephedrine isomers with the corresponding aldehyde or ketone. They were analyzed by GC-MS to determine the EI-MS and retention index information. Their rates were evaluated for consistency with their probable structures. A mechanism has also been proposed for the reactions.

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COMPOSTED MUNICIPAL GREEN WASTE AS AN ECONOMICALLY-AND ECOLOGICALLY-SOUNDED GERMANATION MEDIA FOR USE IN THE CALIFORNIA VEGETABLE TRANSPLANT INDUSTRY

California is a leading producer of vegetables in the United States with an estimated value of $7.8 billion in 2007. This industry relies heavily on the use of media composed primarily of sphagnum peat, vermiculite and perlite for seed germination. Among these, peat is found in the highest percentage, often as high as 75%, primarily due to its high water holding capacity, good CEC etc. Unfortunately use of such a high percentage is not without some cost, both ecologically since peat is a considered a non-renewable resource and its harvest significantly alters natural ecosystems, and economically with peat acquisition consuming a significant portion of the transplant industry's annual propagation expenses. With this in mind, there is a considerable effort to identify regionally produced peat alternatives. The objective of this study is therefore two-fold: provide an economical and ecologically feasible 1) peat alternative for the vegetable transplant industry, and 2) waste disposal outlet for municipalities (composted green waste, CGW). Germination rate/%, plant height, and root zone integrity (RZI) of Broccoli (Brassica sp.) Tomato (Solanum sp.) and Pepper (Capsicum sp.) seedlings were assessed in commercially available peat/perlite and/or CGW blends. In Brassica sp. there is little difference in growth parameters between the media formulations suggesting that CGW can be successfully incorporated without negatively impacting transplant vigor. Qualitative analyses also suggested that RZI may be enhanced by addition of CGW. For Solanum sp. there is a wide range of germination %, suggesting that some media formulations may not be acceptable for use in the transplant industry. Considerable variation in germination within treatments was also observed, a quality not well tolerated in the transplant industry. There were; however, two media formulations for Solanum sp. that look promising for use in the transplant industry. It is evident that the use of CGW at either a 25 or 50 % did not negatively affect seedling height. As with Brassica sp., RZI in Solanum sp. was also enhanced by incorporation of CGW. Data for Capsicum sp. is currently being analyzed as planting for this species occurred at a later date. These data suggest that CGW may be a viable alternative media component for the California vegetable transplant industry. Subsequently reducing production costs and reducing any potential negative impacts resulting from the continued use of peat.

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A COMPONENT ANALYSIS OF THE EFFECTS OF GRADUATED EXPOSURE AND DIFFERENTIAL REINFORCEMENT ON PHOBIC BEHAVIORS

Anxiety disorders are one of the major psychological health issues confronted by the recipients and treated by the providers of mental health services today. Anxiety has historically been a central research topic of mainstream psychology. Although behavior analysis has paid relatively little attention to the subject in the past, there has been a growing interest by behavior analytic researchers on the subject, and a small number of studies on specific phobias – a subset of anxiety disorders – have been conducted. The findings of this research point to the effective combination of the treatment techniques of graduated exposure and differential reinforcement in the treatment of specific phobias. However, there are no known studies that have examined the efficacy of these individual treatment components. The current study conducted a component analysis of graduated exposure and differential reinforcement. Three California State University, Fresno students participated based on their individual fear of spiders questionnaire scores (Szymanski & O'Donohue, 1995). An alternating treatments research design was employed. The independent variables were graduated exposure, differential reinforcement, and graduated exposure plus
differential reinforcement. The dependent measures were Behavioral Relaxation Training (Poppen, 1998) and heart rate. The three experimental conditions were randomly ordered within sessions, and three-to-four sessions were conducted with each participant. Results suggest that no single component was more effective than the other. Therefore, the application of these component techniques individually or in combination should be determined by the individual seeking clinical support for specific phobia.

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RESPONSE OF SOIL MOISTURE SENSOR READINGS TO SOIL TEMPERATURE

Residential irrigation water use efficiency can be improved through the use of state of the art irrigation technologies such as "smart" controllers and soil moisture sensors. Smart Water Application Technologies™ (SWAT™) was initiated by water purveyors to promote residential irrigation water use efficiency through these technologies. Excess water can be saved by canceling water cycles scheduled for times when the soil is already saturated with the use of these "smart" controllers and soil moisture sensors. A crucial phase in this process is to evaluate the reliability, effectiveness and accuracy of various soil moisture sensors when exposed to different soil temperatures. The set of sensors being evaluated operate on the principle of Time Domain Transmissometry (TDT). In this technique an electro-magnetic (EM) step pulse travels down a transmission line and a voltage threshold is detected at the other end of the transmission line. The transmission of the EM signal is directly related to the moisture content of the soil medium, and is therefore influenced by soil temperature. Therefore, in the current study, we focus on the effects of temperature on TDT soil moisture sensor readings. A series of tests were conducted under laboratory conditions in accordance with the standardized protocol established by the Irrigation Association. Data generated for TDT sensors installed in sandy loam and maintained at various soil temperatures (15°C, 20°C, 25°C, 30°C, 35°C) indicate a high correlation (R2 values ranging from 0.86 to 0.98) between the volumetric moisture content measured by the sensor and our calculated values for the various soil temperature treatments. In future work, we will also evaluate the performance of the sensors to the various soil temperatures when installed in relatively more coarse (sandy) and finer (clay) textured soils.

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FUNCTION AND EXPRESSION DYNAMICS OF Rho, Rac and Cdc42 GENES IN THE STARLET SEA ANEMONE, Nematostella vectensis

The objective of this study is to examine the patterns of gene expression and function of the Rho family of small GTPases (including Rho, Rac, and Cdc42) during development in the starlet sea anemone, Nematostella vectensis. Nematostella is a member of the phylum Cnidaria, which is the sister-group to the Bilateria, all animals exhibiting bilateral symmetry, such as humans, mice and fruit flies. Nematostella has recently become an important model organism for the study of cnidarian developmental biology due to the wealth of molecular tools being developed. Studying the function of genes in cnidarians and comparing them to those of bilaterians can give us insight into how these genes' functions have evolved over time. Rho GTPases play a significant role in regulating the actin cytoskeleton, and therefore are involved in regulating the cellular behaviors required for development. Our initial studies have been aimed at cloning and determining the expression dynamics of these genes. We have used a number of different techniques such as PCR and Gel Electrophoresis to amplify and extract the Nematostella Rho, Rac and Cdc42 genes. After cloning these genes, probes were constructed via transcription reactions, and the levels and patterns of gene expression were visualized in fixed embryos via in-situ hybridization reactions. We have observed that Rho and Rac genes are ubiquitously expressed throughout the embryo at different stages of development including gastrula and planula stages, whereas Cdc42 is expressed mostly in the endoderm layer. In addition, all three genes have a higher level of expression in the endoderm layer during the later stages relative to the earlier stages of development. In the next stage of our research, we intend to microinject Nematostella embryos with morpholino antisense oligonucleotides to knockdown gene expression and gain insight into the functions of these genes.

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EVALUATION OF AN ECO-FERTILIZER AND UREA AMMONIUM NITRATE FOR GROWING BELL PEPPERS

This study was conducted as part of the on-going effort to optimize fertilizer use efficiency in vegetable cropping systems typical of California. The overall goal of the research was to investigate the efficacy of manure based eco-fertilizer on bell peppers grown in a sandy loam and a salt affected clay soil. The eco-fertilizer used is a relatively new product derived from fresh cattle manure that has the potential to work as both an eco-fertilizer and as a soil conditioner. In this phase of the research we compared eight application protocols for the eco-fertilizer (T1, T2, T3… T9), to that of the typical farmer's practice (T1) with urea ammonium nitrate (UAN-32) for bell peppers grown under greenhouse conditions. For each soil type, there were 27 completely randomized pots representing three replicates of the nine treatments. In addition to soil samples were analyzed 90 days after transplanting (DAT) for the amount of ammonia and nitrate in the root profile ($P<0.05$). In the sandy loam experiment, the fertilizer treatments had no significant effect on both ammonia and nitrate levels. In the saline clay soil, there were no significant differences in relative levels of ammonia and nitrate. Moreover, there was no significant difference in the plant yield of both clay soil and sandy loam soil. These results are important as the eco-fertilizer was applied once at transplanting while UAN-32 was applied during six different applications, thereby implying that the use of the eco fertilizer can result in potential labor cost and energy savings.

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COMPARING FACIAL COMPOSITE SOFTWARE EFFECTIVENESS IN CORRECT TARGET IDENTIFICATION

Little is known about the effectiveness of computer generated facial composite software regarding the correct identification of suspects. Even less is known about the effectiveness of one facial composite software version to another. This study compared versions 3.0 and 4.0 of the FACES software from InterQuest Inc. in assessing which version yielded the most correct target identifications. In phase 1, participants created composites from memory of a mugshot photograph using either FACES 3.0 or 4.0 software. In phase II, separate participants were presented with those composites along with a forced-choice five-photograph lineup. Participants selected a target photograph that was perceived to be most similar to the composite and rated their confidence in their selection. As predicted, results demonstrated significantly higher target/composite likeness when composites were created with FACES 3.0 (63%) than the newer FACES 4.0 (45%) software. These results are interpreted as a buildup of interference caused by exposure to more facial features in the newer software version 4.0. Contrary to intuition, this suggests that a larger library of features in facial composite software may reduce target/composite likeness when composites are created from memory.

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COMPARATIVE RESPONSES OF NATIVE CALIFORNIA GRASS SPECIES TO DROUGHT: POTENTIAL SIGNIFICANCE FOR RESTORING RETIRED AGRICULTURAL LAND

In California, less than 2% of native grasslands remain due to agricultural expansion and presence of non-native plant species. Reductions in water supply have resulted in the retirement of agricultural land and an interest in re-establishing native species. Understanding native plant species biology is required to develop suitable management options for restoration, especially in the drought-prone San Joaquin Valley. This growth-chamber study examined two native grasses, Hordeum depressum (HODE) and Vulpia microstachys (VUMI) and their responses to adequate (control) and limited (treatment) water supply over a 90 day period. Responses measured were biomass (determined by a final destructive harvest, n=10) and photosynthetic rate (determined using a LiCor LI-6400 gas exchange system, n=7). Control conditions provided 200 mL water per week, whereas treatment conditions progressively reduced water availability during the final four weeks of growth to 150 mL, 100 mL, 80 mL and 50 mL per week. Under control conditions, total biomass of HODE and VUMI were 0.270 gDW and 0.236 gDW, respectively. These values declined under treatment conditions to 0.211 gDW in HODE ($P<0.036$) and 0.132 gDW in VUMI
($P><0.015$). Limited water resulted in root biomass declines of 16.7% and 41.9% in HODE and VUMI, respectively. Leaf biomass was also reduced under treatment conditions, but the impact on VUMI (48.1% reduction)was greater than in HODE (30.9% reduction). At the start of the experiment (day 36), HODE had a significantly greater ($P><0.006$) photosynthetic rate (4.84 *f*Ýmolm-2s-1) than VUMI (1.76 *f*Ýmolm-2s-1). However, by day 90 both species exhibited similar photosynthetic rates (~1.95 *f*Ýmolm-2s-1) that were not significantly affected by water availability. These results suggest that species specific variation in carbon partitioning patterns (root vs. leaf) and early season photosynthetic rate are likely to be critical in determining plant growth and therefore success in re-vegetating retired agricultural

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BENEFICIAL AND HARMFUL EFFECTS ON MEMORY FOR RELATED INFORMATION USING ICLICKERS

Personal classroom response systems have been shown to increase student engagement as well as providing useful immediate feedback to instructors during instruction. However, there is no research relating such systems to basic memory research demonstrating the mnemonic benefit of retrieval. In a 2x4 mixed-subjects design, we investigated how using the IClicker system might be used to enhance memory for related information. After reading passages of mundane factual information, participants used IClickers on one set of multiple-choice questions in four ways: with the alternatives presented at a delay after the multiple-choice questions (retrieval-delayed), with the alternatives presented simultaneously (retrieval), with the correct alternative highlighted (re-presentation), or without questions. A second set of related multiple-choice questions was then given to all participants in a standard manner. Questions in this second set were either difficult or easy, as measured through pre-existing question norms. Not surprisingly, results demonstrated significantly higher performance for easier multiple-choice questions.
Results also demonstrated an overall benefit from presenting questions and then presenting alternatives at a delay. This benefit seems to occur only when the initial questions were easier. Together, these findings have implications for optimal use of personal response systems from the perspective of memory benefits from retrieval on related information.

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TRACKING THE FATE OF ACORNS IN OAK WOODLANDS

California's Oak woodlands are partly threatened by low regeneration rates in many oak species. Western Scrub Jays eat and cache (store for later) acorns and are natural oak dispersers. To measure the effectiveness of dispersal by scrub jays, we must track the fate of individual acorns from the source to the cache to eventual consumption or germination. Understanding this is key to potentially using scrub jays to disperse acorns to help the oak populations recover. Our objective is to test a new method for tracking the fate of cached acorns. Previous studies tracked acorns by tagging them with 1) radioactive isotopes, 2) metal tags, or 3) radio-transmitters hidden inside; each method has limitations. Isotope tagging presents safety issues and is not easily permitted. Metal detectors cannot discriminate between tagged acorns and other metals in the soil necessitating disturbing the cache for verification. Radio-transmitters are expensive for large-scale use, and require long antennae which deter scrub jays from picking tagged acorns. We are testing a new method using cheap radio-frequency identification (RFID) tags inserted into the acorns coupled with visual observations of foraging behavior. RFID tags (N = 50) are inserted into acorns placed in feed trays within several western scrub jay territories. Teams of three observers watch the trays: 1) to monitor if the acorns are eaten or taken to be cached; 2) to follow the birds as they leave the tray to cache the acorn. Observed cache locations are recorded with a GPS unit after verification with a hand-held RFID tag reader. Cache sites are then visited twice weekly to determine whether the acorns are intact or have been eaten/moved. Observations to date suggest that scrub jays cache approximately 15% of all acorns selected. Survival rate of cached acorns is now being measured.

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USING FLOURENCE MICROSCOPY TO CHARACTERIZING THE NEUROSPECIFICITY OF THE ENVIRONMENTAL TOXIN, BMAA

BMAA (b-methylamino-L-alanine) is a non-protein amino acid implicated in causing amyotrophic lateral sclerosis/parkinsonism dementia complex (ALS/PDC), a fatal neurodegenerative disorder often characterized by progressive muscular atrophy, lost of motor functions, and dementia. Interest in BMAA began when it was discovered that the high incidence of ALS/PDC reported among the Chamorro people of Guam during the 1950s could be linked to their diet, which included cycad seeds that naturally contained BMAA. So far, research has been able to confirm BMAA as a neurotoxin, but further research is necessary to establish an association between the development of ALS/PDC and exposure to or consumption of BMAA. Using Drosophila melanogaster Canton S flies as an insect model, I hope to determine the specificity of BMAA for different classes of neurons. The three neuron classes of interest are: motor neurons, which are associated with ALS; cholinergic neurons, which are associated with Alzheimer's Disease or disorders characterized by dementia; and dopaminergic neurons, which are associated with Parkinson's Disease. Canton S flies that have had their motor neurons, cholinergic neurons, or dopaminergic neurons transgenically modified to co-express green fluorescent protein
(GFP) will be treated with BMAA. Fluorescence microscopy will be used to assess cell viability in response to the toxin. The results from this study will help to further establish the association of BMAA with ALS/PDC, potentially providing valuable information for the development of successful chemical and therapeutic treatments for some of today's most detrimental and prominent neurological disorders.