22ND ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM

PROCEEDINGS OF THE 2001 SYMPOSIUM

Convened on

Friday, April 20, 2001

at

University Business Center
California State University, Fresno

TWENTY-SECOND ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM

PROCEEDINGS

Sponsoring Institutions

California State University, Fresno
University Grants and Research Office

University of California, San Francisco
Fresno Medical Education Program

Alliant University, Fresno

Fresno City College

Fresno County Health Services Agency

United States Department of Agriculture
Agricultural Research Service

Valley Children's Hospital
Research Projects and Administration

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

California State University, Fresno

April 20, 2001

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PREFACE

Welcome to the *22nd 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 them.

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

This year *UCSF Fresno ~~Medical Education Foundation~~* 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 University* has provided one cash award for the best symposium presentation by a doctoral student. *Valley Children's Hospital* has provided a cash award for the best poster presentation. The *Grants and Research Office of 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 student awards, which will be held in the University Business Center Gallery.

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
Malcolm F. Anderson, M.D.
Symposium Co-Chairperson

Deborah Stewart, M.D.
Donna Hudson, Ph.D.
Kent Yamaguchi, M.D.
Sundeep Nayak, M.D.
Sean Shafer, M.D.
Rick Stewart
Davin Youngclarke

CALIFORNIA STATE UNIVERSITY, FRESNO
Thomas McClanahan, Ph.D.
Symposium Co-Chairperson

Andrew Alvarado, Ph.D.
Sharon Benes, Ph.D.
John Beynon, Ph.D.
Alejandro Calderon-Urrea, Ph.D.
Amir Huda, Ph.D.
Pamela Lackie, Ph.D.
Lynnette Zelezny, Ph.D.
Doug Carey

ALLIANT UNIVERSITY, FRESNO
Merle Canfield, Ph.D.

FRESNO CITY COLLEGE
Edward Lindley, Ph.D.

FRESNO COUNTY HEALTH SERVICES AGENCY
David Hadden, M.D.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Cynthia Eayre, Ph.D.
Joseph Smilanick, Ph.D.

VALLEY CHILDREN'S HOSPITAL
Robert Wells, Ph.D.

EVENT AND PROCEEDINGS COORDINATORS
Millie C. Byers & Marie Fisk
California State University, Fresno

CALIFORNIA
STATE
UNIVERSITY,
FRESNO

April 3, 2001

MESSAGE TO ALL RESEARCH SYMPOSIUM PARTICIPANTS

California State University, Fresno is pleased to serve as the host campus for the *Twenty-second 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 the ultimate goals of 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

Office of the President

Thomas Administration
Building, 103
5241 North Maple Ave. M/S TA48
Fresno, CA 93740-8027

559. 278-2324
Fax 559. 278-4715

University of California
San Francisco

UCSF

Fresno Medical Education Program

Office of the
Associate Dean

Medical Education Building
2615 East Clinton Avenue
Fresno, CA 93703

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email:
dean@ucsfresno.edu

WELCOME
to all Participants of the
22nd Annual
Central California Research Symposium

I am delighted to have this opportunity to welcome you to the 2001 Central California Symposium. The direction of the future is being determined by the research efforts of today, and it is energizing for me to witness the quality of research that is currently being conducted and presented at this Symposium. This event is the collaborative result of strong dedication and teamwork among the Central Valley's premier academic institutions. I am certain that you, too, will be captivated and challenged as you explore this year's Symposium.

Sincerely,

Deborah C Stewart

Deborah C. Stewart, M.D.
Associate Dean / Professor in Pediatrics
UCSF-Fresno Medical Education Program

Fresno City College

1101 East University Avenue, Fresno, California 93741

Office of the President
(559) 442-4600

February 9, 2001

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, once again, to be a sponsor of the 22nd 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.

Sincerely,

Daniel L. Larios
President

jzm

United States Department of Agriculture

Research, Education and Economics
Agricultural Research Service

March 12, 2001

Symposium Participants
22nd Annual Central California
Research Symposium
Fresno, California

Greetings:

On behalf of the USDA, ARS, Horticultural Crops and Water Management Research Laboratories located in Fresno, I would like to extend a welcome to you for the 22nd Annual Central California Research Symposium. Fresno now has a large research community made up of scientists from state, university and federal sectors covering a multitude of disciplines (i.e., biological and physical sciences, agriculture, medicine). This Symposium provides an avenue for information exchange and possible lines of cooperative research among these scientists. It also provides an opportunity for the non-scientific community to "find out what's going on." I hope you take advantage of this opportunity to learn about research being conducted in the area. There also will be potential scientists at the Symposium. Who knows, maybe you can steer them towards your area of expertise.

I hope your attendance and participation opens new horizons and provides new opportunities for you and your parent organization. If we can be of any assistance to you on agricultural matters, please do not hesitate to contact us.

Again, welcome to the Symposium and may your scientific endeavors and horizons increase in the future.

With best regards,

Patrick Vail

PATRICK V. VAIL
Laboratory Director/Location Coordinator
Supervisory Research Entomologist

Pacific West Area – Horticultural Crops Research Laboratory
2021 South Peach Avenue • Fresno, CA 93727-5951
Voice: 559.453.3000 • Fax: 559.453.3088 • E-mail: lfouse@asrr.arsusda.gov

Valley Children's Hospital

February 12, 2001

Symposium Participants
22nd Annual Central California
Research Symposium
California State University, Fresno
University Grants & Research Office
Fresno, CA 93726-1852

Dear Symposium Participants:

The mission of Valley Children's Hospital is to provide high quality, comprehensive health care services to nearly one million children in Central California. Valley Children's Hospital is dedicated to supporting research that benefits our children and their families.

On behalf of all the physicians, staff, and volunteers at Valley Children's Hospital, we are proud to be a sponsor of the 22nd Annual Central California Research Symposium which will be held April 20, 2001 at California State University, Fresno. This multi-disciplinary forum serves as an excellent example of institutional cooperation, student participation, and community involvement that results in enriching the training of scientists for our community.

We extend our best wishes to all participants.

Sincerely,

Stephen R. Stephenson, M.D
Senior Vice President, Medical Affairs

sd

Plenary Session

University Business Center
Auditorium, Room 191

12:30 Opening Remarks

Dr. Michael Ortiz, California State University, Fresno

Dr. Thomas McClanahan, California State University, Fresno

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

12:40 ***T.S. Eliot and the Birth of Modernism***
Adrienne Peek

12:55 ***Credibility and Attractiveness as a Function of Persuasive Influence***
David Barnard

1:10 ***Inhibition of Ovarian Reproductive Development, by Methyl Farnesoate (MF), in the Tadpole Shrimp*** **Triops longicaudatus**
Colby J. Linder

1:25 ***The Incidence and Treatment of Prehospital Motion Sickness***
Tricia Soliz

1:40-1:50 **Break--University Business Center, Gottschalks Gallery**

Moderator: Dr. Donna Hudson

Concurrent Session A

University Business Center
Auditorium, Room 191

1:50 ***A Study of the Effectiveness of Introducing a Protocol for Coping with Agitated Behavior in One Skilled Nursing Facility***
Judith Keough, R.N., Ed.D., Xavier Cagigas, B.A.

2:02 ***Identification of the Principle Target of Inhibition by a Potent Polypeptide Anticoagulant Present in* Haemadipsayanyiianesis*, the Chinese Leech***
Michael Schilling, Joseph Sy, Ph.D.

2:14 ***Reproductive Characteristics of the Chinese Mitten Crab,* Eriocheir sinensis**
Angela Toste, Brian Tsukimura, Ph.D.

2:26 ***Cloning tfd Promoter Constructs in the 2,4-Dichlorophenoxyacetic Acid Pathway***
Mireya Macias, Jovita Ornelas, Alice Wright, Ph.D.

2:38 ***Effect of Muscular Dystrophy on Phosphoglucomutase Activity in Brain and Breast Muscle of Embryonic and Posthatch Chick***
Phil Gregoretti, Lenore Yousef, Ph.D.

2:50 ***Early Onset of Lupus Symptoms in MRL/lpr Mice correlates to the Production of IgG Antibodies Cross-reactive with both Cyanobacterial and Human (HeLa) Nuclear Extracts***
Christy Fiorentino, S.A. Kovacs, Ph.D.

3:02 ***Molecular Analysis of Microbial Community Structure and Diversity in Fumigated Agricultural Soils***
Lori Orosco, H. Ajwa, I. Gutierrez, M. Schutter, A.D. Wright

3:15 **Break - University Business Center, Gottschalks Gallery**

3:30 **Concurrent Sessions Resume**

Concurrent Session B

University Business Center
Room 192

1:50 ***Pediatric Ethics Case Based Research***
Robert D. Wells, Ph.D. and Barbara Dahl, M.A.

2:02 ***Utilizing Clinical Pathways for Pediatric In-patient Care***
Barbara Dahl, M.A., Robert Wells, Ph.D., and Stephen Wilson, M.D.

2:14 ***Standardization and Documentation of Nausea Assessments Using a Faces Rating Scale in a Pediatric Setting***
Wenee Liu, Pharm.D., William Koole, Pharm.D., and Vonda Crouse, M.D.

2:26 ***Goal Setting and Achievement in Children and Teenagers Hospitalized for Traumatic Brain Injury***
Wendy Garbarino, Steve Roberts, Robert Wells, and Terry Hutchison

2:38 ***Perceived Health Needs & Barriers to Health Services Utilization of Fresno Adolescents: An Exploratory Study***
Pouran Nowzari-Sohrabi, Ed.D., MSPH, Ashley Calingo, Michelle Seals

2:50 ***Development of a Family-Centered Care Survey Instrument***
Stephen D. Roberts, Ph.D., Denise Vermeltfoorte, R.N.

3:02 ***A Survey of College Students' Weight Loss Methods***
Jill Russom, M.D., Chick F. Tam, M.S., Dr. PH, DIM, CNS,
and Davin Youngclarke, M.A.

3:15 **Break - University Business Center, Gottschalks Gallery**

3:30 **Concurrent Sessions Resume**

Concurrent Session C

University Business Center
Room 193

1:50 ***Quality of Earnings: A Test of the Naive Investor Theory***
Melissa Price

2:02 ***Effective Internet Advertising Through Website Characteristics***
Chris McClean

2:14 ***Differences In Effectiveness Between Computer-Based Training and Instructor-Based Training for Computer Software***
Ivan Hoong

2:26 ***Is Corporate America Ready For The "Telecommuting Village"?***
Shan Chin

2:38 ***How the Use of Control Mechanisms in Fresno County Nonprofits Help Predict the Relationship Between Executive Directors and Their Board of Directors***
Carrie Belsito

2:50 ***Accounting for Goodwill In Business Combinations***
Wendy Jackson

3:02 ***Fresno's Movie Theaters: An Economic Analysis***
Benjamin Maddox & Brian Qualls

3:15 **Break - University Business Center, Gottschalks Gallery**

3:30 **Concurrent Sessions Resume**

Concurrent Session D

University Business Center
Room 194AB

1:50 ***Anger Attacks in Anxiety Screening Participants***
Tiffany Rice, Christine Edmondson, Ph.D.

2:02 ***The Influence of Group Norms on Individual Health-Related Behavior***
Aubrey Penland, Debra Bangasser, Christopher Clausen

2:14 ***Gender Stereotypes Adolescent Males Ages 12 to 13***
Rhette Piazza

2:26 ***Gender and Ethnic Differences in Referrals to School Psychologists***
Christopher Williams

2:38 ***Mexican-American Interaction Patterns in Mainstream American Classrooms: A Study of Teacher Awareness***
Bonnie Tomasovich

2:50 ***The Validity and Reliability of Program Quality Review as a Process for Educational Program Evaluation in California's Elementary Schools***
Susan Rae Macy, Ed.D.

3:02 ***Web-Based Production/Operations Management Experiential Learning***
J. M. Moghaddam, Ph.D.

3:15 **Break - University Business Center, Gottschalks Gallery**

3:30 **Concurrent Sessions Resume**

Concurrent Session E

University Business Center
Room 194C

1:50 ***Austrian Decision-Making in July 1914***
Nathan Orgill

2:02 ***Hernan Cortes and His Place Among the "Great Men" in History***
Salvador Diaz

2:14 ***The Apostle Paul***
Ray Sanchez

2:26 ***Gnostics Versus Christians: The Christians Were Smarter***
Ray Johnson

2:38 ***Thucydides Tragicus***
Kyra Avila

2:50 ***The Horns of Greek Battle-Lines***
Curtis Eastin

3:02 ***The Problems of Nationalism and National Security: The Two Essential Causes of World War I***
Craig Longan

3:15 **Break - University Business Center, Gottschalks Gallery**

3:30 **Concurrent Sessions Resume**

3:30 ***Joint Doctoral Programs: Collaboration While Co-mingling University Missions***
Judith Cantrell Harris and Kimberly Williams

3:42 ***School Social System Characteristics Within High School Settings Of Different Size and Teachers' Perception of Student Violence and Disruption***
Robert P. Murray

3:54 ***Client Satisfaction: Building a More Sensitive Scale***
Daniel Model

4:06 ***A Grounded Theory of Becoming a Teen Parent Among Juvenile Hall Females: Implications for Public Policy***
Stephanie Parmely

4:18 ***Youth Violence: An Inner-City Conflict Resolution Training Program, in a Rural Multicultural Elementary School***
Diana Foster, M.P.H., Vickie Krenz, Ph.D., M.S.P.H., Donald Pogoloff, J.D., M.P.H., and Donna Callahan, M.S.W.

4:30 ***An Ongoing Study of Student Needs To Fit the Changing Student Segments at Craig School of Business (CSB)***
Diane Decker, M.S. and Tom Burns, M.B.A.

4:42 ***Linguistic Antecedents and Evolutionary Features of New Mexican Spanish***
Atilano Valencia, Ph.D.

4:54 **Conclusion--University Business Center, Gottschalks Gallery**
Proceed to Students Awards and Social Hour

3:30 ***Potential for Using Allium spp. Amendments, With and Without Soil Heating, For Weed Control Via Biofumigation***
Susan Mallek, James Stapleton, Timothy Prather

3:42 ***Effect of Composted-Biosolids on Fruit Quality and Trace Element Accumulation in Field-Grown Apricots***
Sajeemas Pasakdee, S. Benes, G. S. Banuelos, and S. Gu

3:54 ***Using Air in Sub-Surface Drip Irrigation (SDI) to Increase Yields in Bell Peppers***
Genett Carstensen, Dave Goorahoo, Ed Norum, David Zoldoske

4:06 ***Intrastream Movements of the California Newt (Taricha torosa sierrae) in an Intermittent Central California Foothill Stream***
Julie Vance

4:18 ***San Joaquin Kit Fox and Non-native Red Fox Interspecific Interactions***
Howard O. Clark, Jr.

4:30 ***Ammonia Emissions From Nitrogen Fertilizer Applications- Field Sampling Methodology***
Charles Krauter and Dave Goorahoo

4:42 ***Riparian Vegetation of the San Joaquin River***
Scott Barker, S. Juarez, W. Moise, B. Hendrickson

4:54 **Conclusion--University Business Center, Gottschalks Gallery**
Proceed to Students Awards and Social Hour

Concurrent Session H

University Business Center
Room 193

3:30 ***An Assessment of Public Transportation Needs of the Aging Population in Fresno and Madera Counties, California***
William H. Dailey, GS MPA

3:42 ***"Mindless" Decision Making as a Failure of Contextual Reasoning***
Matthew Sharps, Ph.D., Sandy S. Martin

3:54 ***Telemedicine's Role in Home Care***
Paulette Ginier, MD, FACP, Paula Hensley, RN, Dee Anna Robert, RN, MSN

4:06 ***Assessing and Improving Asthma Caregiver Competence***
Corrie Matlock-Hightower, Robert Wells, Steve Roberts, Barbara Dahl, Wenee Liu, Nitza Coleman

4:18 ***Physician Attitudes About Palliative Care and Hospice Programs***
Rodrigo DeZubiria, MD, Samuel Leon, MD, Davin Youngclarke, MA

4:30 ***Cancer Risk in Vegetarian Populations: A Meta-Analysis***
Paul K. Mills, Ph.D., Lydia Herrea-Mata, MD

4:42 ***Lipoic Acid and Propofol: Effects on Skin Flaps***
Linda Zenieh, R. J. Stewart, K. T. Yamaguchi, H. Gill, S. Sophamixay, G. Gill

4:54 **Conclusion--University Business Center, Gottschalks Gallery**
Proceed to Students Awards and Social Hour

Concurrent Session I

University Business Center
Room 194AB

3:30 ***Phenotypic Characterization of the dumpy Phenotype in Drosophila melanogaster***
Jayson Hardcastle, Patricia Chavez, Linda Wells

3:42 ***Role of Metal Ions in the Biosynthesis of the Diterpenoid Marrubiin in the Common Horehound (*Marrubium vulgare*)***
Alexander Candia, Roy E. LaFever

3:54 ***Evaluation of Skin Flaps Using Video Microscopy to Predict Flap Viability***
Harprabhjit Gill, S. Sophamixay, G. Gill, R. Stewart, K. Yamaguchi, T. Thompson

4:06 ***Inverted Duplication 15q25 (Tetrasomy 15) in an Eight Year Old Patient***
Linda Xiong, J. Gray, R. Vandergon

4:18 ***Enzymatic Deglycosylation of Crustacean Yolk Proteins***
Daniel Bauer, Brian Tsukimura, Ph.D.

4:30 ***San Joaquin River System Anadromous Fish Passage Literature Review***
Keri Pilgrim

4:42 ***Design of Reinforced Earth***
Chandra Brahma, Ph.D.

4:54 **Conclusion--University Business Center, Gottschalks Gallery**
Proceed to Students Awards and Social Hour

Concurrent Session J

University Business Center
Room 194C

3:30 ***Roman Heroism In Virgil's* Aeneid *During the Augustan Ag*e**
Hugo Vela

3:42 ***V. S. Naipaul and Postcolonial Fragmentation***
Ly Chong Jalao

3:54 ***The Death Poem: A Study on William Blake's Marriage of Heaven And Hell***
Luiz Claudio Carneiro Monteiro Prazeres

4:06 ***"Beauty, and use, and harmony": Feminine and Masculine Romantic Androgyny***
Michelle Karell

4:18 ***Poets, Farmers & Statesmen: An Analysis of the Political Implications in the First Book of Virgil's* Georgics**
Kristi Hill

4:30 ***From "Nigger" to "Nigga": The Use of the Word Nigger in 19th Century Blackfaced Minstrelsy and Hip-Hop Music***
Angela Jackson

4:42 ***Prosodic and Linear Licensing in English Acquisition***
Shannon Bills

4:54 **Conclusion--University Business Center, Gottschalks Gallery**
Proceed to Students Awards and Social Hour

Poster Session
12:30 p.m. until 4:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 2:00 p.m. until 3:00 p.m.

(1) ***Spin-lattice Relaxation Time Measurements Using Hahn Echo Technique***
Sergio Aguilar, Jed Davis, Dean Neufeld, Tony Pixton, Chue Vue, Scott Wenholz, Parameswar Hari, Ph.D.

(2) ***The Heilbronn Problem***
Alejandra Alvarado, Dr. Paul Goldston

(3) ***The Design of an Automated Insertion Machine***
Dr. Tony Au, Patrick Seames, Brian Griffin, Victor Leyva, Tim O'Dea, Danny Solano

(4) ***Affirmative Action, Racism, and Multidimensional Prejudice***
Eric Cotton, and Karl Oswald, Ph.D.

(5) ***How Far Is That By Air? The Derivation Of An Air:Ground Coefficient***
Marco Diaz, MD, Gregory Hendey, MD, and Richard Winters, MD

(6) ***The Politics of Urban School Reform: The Political Disparities in Secondary Education in Contemporary America***
Regina Favors

(7) ***Test-taking Strategies Using Frequency of Occurrence Information***
Renee Frigon, Eva Oxelson, and Karl Oswald, Ph.D.

(8) ***The Unprecedented Observation of Solid-State ^{63}Cu-NMR Signals for a Coordination Compound of Copper(I)***
Saeed Attar, Ph.D., Parameswar Hari, Ph.D., and Kim F. Goto

(9) ***Academic Language Proficiency and Science Achievement***
Jennifer Gray and Phyllis Kuehn

(10) ***Efficacy of Etanercept in Refractory Juvenile Spondyloarthropathy***
Michael Henrickson, MD

Poster Session Continued
12:30 p.m. until 4:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 2:00 p.m. until 3:00 p.m.

(11) ***The Next Tiger? The Multidimensional Effects of Foreign Investment in Vietnam***
Joyce Lee

(12) ***Ethical Perspectives and Decision-Making Approaches Used By Business Students***
Yvette Lopez and Dr. Paula Rechner

(13) ***Triazine Herbicides and Ovarian Cancer Risk: Methodology and Preliminary Results***
Paul K. Mills, Ph.D., Debroah Riordan, M.P.H., Rosemary Cress, Dr. P.H., and David Goldsmith, Ph.D.

(14) ***Asymmetric Synthesis of 6,7 epoxy 3,7 dimethyl citronellyl pivalate***
James Miranda and Ronald Marhenke, Ph.D.

(15) ***Generating Basic Sequences***
Natalia Moore and Norman T. Woo, Ph.D.

(16) ***Increasing Protein Uptake in Nematodes by Using the Transduction Domain***
Brian O'Roak and G.W. Polack

(17) ***Diabetes Management***
Mark Pinto, MD, Paulette Ginier, MD, FACP, Sharon Reynolds, MSN, and Paula G. Hensley, RN

(18) ***Interaction Effects of Stress and Stereotypes on Self-Efficacy, Task Performance, and Anxiety***
Iris Price and Lynnette Zelezny, Ph.D.

(19) ***A Hubble Space Telescope Snapshot Survey of Nova Shells***
F. A. Ringwald, Ph.D.

Poster Session Continued
12:30 p.m. until 4:00 p.m.

University Business Center
Gottschalks Gallery

Authors will be available for questions from 2:00 p.m. until 3:00 p.m.

(20) ***Challenges in Manipulating Genomic DNA in Cosmid Vectors: Evaluation of Transformation and Cosmid Recovery Methods***
Mary Scully

(21) ***Conservation of Regulatory Sequences in the 2,4-D Pathway***
Kurt Sterling and Alice D. Wright, Ph.D.

(22) ***A Replication of Sequential Treatment of Split Word Lists in a Speaker with Apraxia of Speech***
Nicole Theiner and D. Freed, Ph.D.

(23) ***Preservation of DNA Extracted from Whole Blood Stored Long Term on Fabric at Different Environmental Conditions for Use in Forensic DNA Analysis***
Tia Yang, Ana Villalvaso, Steve Rowe, J.E. Gray, and D. Frausto-Heredia

(24) ***Characterization of Novel Solar Cell Materials***
Wen Zhou, Parameswar Hari, Ph.D., and Saibal Mitra

(25) ***Bridging the Gaps: Service-learning and Community College ESL Students***
Marlene Elwell

(26) ***Team Physician Participation in High School Varsity Football: An Observational Study of Sports Injuries***
Anthony Mendoza, MD, Davin Youngclarke, MA, Susan Hughes, MS, Charles Denman, BS, and Aaron Aguirre

Judges for Undergraduate, Masters, & Doctoral Student Presentations & Poster Presentations:

Ms. Ginna Bearden	California State University, Fresno
Dr. Sharon Benes	California State University, Fresno
Dr. Kathryn Bumpass	California State University, Fresno
Dr. Alejandro Calderon-Urrea	California State University, Fresno
Dr. Merle Canfield	Alliant University, Fresno
Dr. Cynthia Eayre	United States Department of Agriculture
Ms. Sonya Hildreth	California State University, Fresno
Dr. Donna Hudson	University of California, San Francisco
Dr. Pamela Lackie	California State University, Fresno
Mr. Ross LaBaugh	California State University, Fresno
Dr. Thomas McClanahan	California State University, Fresno
Dr. Howard Ono	California State University, Fresno
Dr. Robert Palacio	California State University, Fresno
Ms. Kimberley Robles-Smith	California State University, Fresno
Dr. Joseph Smilanick	United States Department of Agriculture
Mr. Rick Stewart	Veterans Administration Medical Center
Ms. Leslee Weaver	California State University, Fresno
Dr. Robert Wells	Valley Children's Hospital
Dr. Alice Wright	California State University, Fresno
Dr. Lynnette Zelezny	California State University, Fresno

Moderators for Oral Presentations:

Mr. Doug Carey	California State University, Fresno
Dr. Dan Griffin	California State University, Fresno
Ms. Nancy Myers	California State University, Fresno
Dr. Brian Tsukimura	California State University, Fresno
Mr. Davin Youngclarke	University of California, San Francisco

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)

Kyra Avila
California State University, Fresno
Department of History
Graduate Student Presenter

Thucydides Tragicus

With burgeoning Athens as his backdrop, the historian Thucydides sets a stage of characters who act out his great tragedy: The Fall of Athens. Close evaluation of his *History of the Peloponnesian War* leaves the reader with a review of Hellenic history as well as other dynamics that are prevalent among the Greeks at this time. His history is more than simply a series of events in a war between two powers though; it is a treatise on human nature, and the use and abuse of power. But even greater than these, it is an explanation and a forecast of the downfall of a mighty maritime empire that thrived in the fifth century as a result of the inherent tragic flaw of her people: pride, or *hybris.*

If Thucydides discounts the chroniclers and Herodotus, he is limited as to the type of literature he can draw upon when composing his narrative. As such, the only other medium from which he could-consciously or unconsciously-borrow themes, patterns and/or influences would have been drama. He is attempting something entirely new in many ways, but as an Athenian and an aristocrat, he can not help but be influenced by the literary genres most prevalent in his day namely, tragedy.

Scott Barker, S. Juarez, W. Moise, B. Hendrickson,
J. Pierce, K. Pilgrim, K. Mast, and D. Tanner
Department of Water Resources
Through Central Valley Project Improvement Act
(CVPIA) funding

Riparian Vegetation of the San Joaquin River

San Joaquin River riparian corridors were inventoried during summer 2000 to document habitat composition, locate exotic invasive species, assess the health of riparian communities, and identify potential restoration sites. The river was divided into five hydrologic reaches, spanning 150 miles between Friant dam and the confluence with the Merced River. Relevé transects sampled canopy and understory components using line-intercept, DBH, and percent cover. One hundred eleven transects totaling over 11,000 meters of habitat were surveyed, sampling the full range of habitat types in each reach. Transects ranged from 15 m to over 400 m depending upon levee confinement width. Data were incorporated into GIS layers composed over aerial photographs. Based on species composition and canopy height, 30 major vegetation types were identified and delineated on these photographs, and were field-checked for accuracy. Habitats were further characterized using transect data. The results establish that rare natural habitats include riparian oak, mixed riparian, elderberry savanna, and that grassland habitat is the most common. The native plant diversity across habitats ranges between 0-65% of species encountered, but when weighted by cover, native plants contribute to community structure more than exotic species in most habitats. There is a statistically significant decrease in understory native plant cover as one travels upstream. No correlation between native plant diversity, or cover relative to confinement width was found. Future restoration efforts on the San Joaquin River will use data gathered during this inventory to identify other potential restoration sites and develop restoration priorities.

David Barnard, Julie Pappas,
Maribel Venegas, and Lynnette Zelezny
California State University, Fresno
Department of Psychology
Undergraduate Student Presenter

Credibility and Attractiveness as a Function of Persuasive Influence

The aim of this study was to examine the effect of attractiveness and credibility on persuasion in a naturalistic setting. Communicator attractiveness (attractive/unattractive) was manipulated. Credibility (credible/non credible) was manipulated by the communicator's attire (professional/casual). Participants (n=380) were systematically selected from retail shopping centers. Four conditions were compared. An attractive/credible, attractive/non credible, unattractive/credible, and a unattractive/non credible communicator-subject approached target-subjects, and delivered a short dialogue. Target-subjects were asked to sign a petition supporting the position of the communicator-subject. Using a Factorial ANOVA, we found attractiveness significantly effected persuasion $F(3, 376)=5.894, p<.05$; however, no significant effect was found for credibility $F(3, 376)=.762, p>.05$. Finally, no significant interaction was found for credibility and attractiveness $F(3, 376)=.482, p>.05$. The implications of this study may be useful to advertisers, public relations specialists, and market researchers.

Daniel Kenneth Bauer, Brian Tsukimura
California State University, Fresno
Department of Biology
Undergraduate Student Presenter

Enzymatic Deglycosylation of Crustacean Yolk Proteins

Yolk is the main energy source for the developing embryos and larvae until they hatch and feed on their own. The composition of yolk will provide a better insight into the energy needs of the developing embryo. The yolk protein, vitellin (Vn), is a lipoglycoprotein, indicating that Vn is a protein that contains fats and carbohydrates. My experiments were designed to determine the amount of carbohydrates attached to this type of protein. Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) of the Chinese mitten crab, *Eriocher sinensis*, Vn revealed four subunits with molecular masses (MM) of 114 ±2.5 kDa, 102 ±1.7 kDa, 88 ±4.0 kDa and 79 ±1.3 kDa. Exposure to deglycosylating enzymes (Bio-Rad 170-6500) removes N-linked and O-linked carbohydrates from vitellin. Deglycosylation results of the Vn were found to be three bands of MM of 104 _4.4 kDa, 89 _3.2 kDa and 84 _3.4 kDa. This suggests that there is a 10 kDa carbohydrate attached to the 114 kDa subunit. 10 kDa is approximately 3.9 x 10^7 calories per mole of Vn. The Vn of the shrimp, *Sicyonia ingentis,* showed three main subunits of 197 ± 2.3 kDa, 87 ± 1.0 kDa and 81 ± 1.7 kDa. Using deglycosylating enzymes to separate carbohydrates from Vn it was found that the three subunits were at 200 ± 3.2 kDa, 88 ± 1.1 kDa and 82 ± 2.0 kDa. No difference was found between the control and treatment protein subunits for *Sicyonia*, but this may be due to a high level of lipidization interfering with the deglycosylating enzymes or are somehow protected. Carbohydrates are needed to fuel the energy demands of the developing crustacean and the results for *Eriocher* shows this need, which is represented by 10 kDa MM in Vn.

Carrie A. Belsito
California State University, Fresno
Craig School of Business Honors Program
Undergraduate Student Presenter

How the Use of Control Mechanisms in Fresno County Nonprofits Help Predict the Relationship Between Executive Directors and Their Board of Directors

Is your executive director a steward or agent of the organization? Does the type of relationship between the board of directors and the executive director (i.e.. stewardship or agency) make a difference? My study is based on a fairly new idea in the world of business theories: stewardship theory. It was developed as a way to counter agency theory and to provide researchers with the means to explain why CEO's "act in the best interest of their principals" (Donaldson & Davis 1991). I want to expand the knowledge base of this theory by testing a few variables to determine if they may help predict the type of relationship between the board and director. Specifically, I want to examine these issues in the Nonprofit sector. This relationship will be examined by measuring the culture of an organization (individualistic or collectivist) and the expected time frame of the relationship between the board and executive director (short or long time frame). Further, the executive director's loyalty to the Nonprofit will be assessed as well as determining whether or not the use of governance mechanisms are in place. An organization may use the information gleaned from this study to better align its objectives and also to curb both internal and external control mechanisms. The process of collecting data is ongoing. A survey was developed to capture several variables including: size of the Nonprofit, length of time in existence, what generates the Nonprofit's revenue, the loyalty of the executive director, their commitment to the Nonprofit, how strongly their compensation and performance are linked, how much spending discretion they are allowed, whether or not individual or group interests are emphasized, and what types of control mechanisms are in place at the Nonprofit.

Shannon Bills
California State University, Fresno
Department of Linguistics
Graduate Student Presenter

Prosodic and linear licensing in English acquisition

Much work in phonology has gone towards establishing the claim that features (gestures, autosegments) are licensed prosodically. Some models are mixed, claiming that certain features are licensed by root nodes (segments, etc.) while others are licensed by clusters (Salmons & Iverson on laryngeals in Germanic), by onsets and nuclei (Golston & Kehrein 1998 on laryngeals in Mazatec), by rhymes (Lin 1999 on tonal register in Taiwanese), syllables (Yip 1995 on Chinese-type tone), feet (Salmons 1990 on aspiration in Greek and Sanskrit), words (Poser 1982 on anterior in Chumash), and so on. Others are more drastic and propose that all licensing is prosodic (Golston & van der Hulst 2000). In two recent papers Steriade (1997, 2000) has challenged this view and claimed that features are licensed only by what occurs next to them, i.el linearly instead of hierarchially.

We present acquisition data from Sine, an American girl learning English, age 2;6. During the time we have been studying Sine she has produced a very clear pattern of place of articulation changes that bear on the question of whether featural licensing is linear or hierarchical. Sine consistently produces dorsals (k, g) as coronal (t, d) in two environments:

Change contexts

a. word-initially	['tɪŋ]	'king'
	['tandi]	'candy'
b. before a stressed vowel	[o'te]	'o.k.'
	[pə'təz]	'because'

Otherwise, velars show up unchanged:

Retention contexts

c. word-finally	['dɪg]	'dig'
	['alɪk]	'Alec'
d. after a stressed vowel	['nɛks]	'next'
	['tʊki]	'cookie'

An obvious characterization of the pattern is that Sine produces velars only in the codas of syllables and changes them to coronals in the onsets of syllables. Assuming that stressed syllables must be closed in English (Hammond 1999 and others), the change contexts can be collapsed as 'syllable-final' and the retention contexts can be collapsed as 'syllable initial'. Thus a prosodic account is available and parsimonious. The problem comes from the fact that the marked feature (dorsal) is allowed in a marked position (coda) and prohibited in the unmarked position (onset), something we do not expect given the basic presuppositions of prosodic licensing. But a purely linear account does not work either. Contexts (a) and (b) share no left- or right-context (before a sonorant, etc.) that contexts (c) and (d) lack and vice versa.

We propose that an adequate solution must take both (linear) featural context and (hierarchical) prosodic context into account. Specifically, we propose that dorsal stops must be supported by the dorsal gesture associated with the tongue body movement in vowels (a linear context) but that this dorsal gesture must occur within the same prosodic constituent (the rhyme) as the dorsal stop gesture. The exact nature of the conditioning is autosegmental, not prosodic: velars and vowels are both made using the tongue dorsum. But the domain within which this conditioning holds is prosodic, not autosegmental: contexts a and b involve prosodic cousins (onset and nucleus) whereas contexts c and d involve prosodic sisters (nucleus and coda).

Thus while Steriade is surely correct that featural context is crucial to understanding how sounds pattern, the notion of prosodic domain is still required to give a clear and compelling account of phonotactic regularities.

Chandra S. Brahma
California State University, Fresno
Department of Geotechnical Engineering

Design of Reinforced Earth

There is growing need for a systematic presentation of the fundamental concepts of earth-reinforced retaining structure design and the basic steps involved in the computational methods therewith since, unfortunately, no texts, suitable for undergraduate instruction with computer methods are presently available. The presentation illustrates with the in-house developed software "GEOWALL" the advantage of using a computer to perform a design process, which is otherwise lengthy and tedious, for soil reinforcement method of retaining a soil mass. The earth-reinforced retaining system comprises a relatively large number of closely spaced metallic reinforcing strips or woven geotextiles or continuous sheets of geogrids, segmental facing units and selected granular fill. The software package is an interactive program developed for the design of segmental wall systems to retain soils behind the wall. The program uses recent design practices, computerizes manual methods of design to achieve improved speed as well as reliability of calculations, and runs on IBM-PC or other compatible microcomputer hardware using DOS operating system. The program achieves a high degree of user friendliness through an easily followed format and explicit data prompts.

Primary emphasis in developing the software is placed on providing a reinforced-soil mass which is able to provide adequate support to the retained soil, while being both internally and externally stable. The external stability, namely sliding, overturning, bearing failure and deep-seated failure, of a reinforced-soil wall is ascertained in the same manner as for a conventional retaining wall. The internal stability governing reinforcement spacing is checked for an adequate margin of safety with respect to both tension failure due to horizontal loads and pullout resistance of the reinforcement both locally in each individual layer and globally in reinforced zone. The software considers effects of varying ground conditions as well as structural loading conditions in order to achieve the safest and most economical design. Data files with the software would include information on metal rods and/or strips, nonbiodegradable fabrics (geotextiles), geogrids, and the like commonly used in the United States and abroad. It would thoroughly cover the operational side of the computer methods with example problems under varying design conditions.

The software "GEOWALL" would be of special interest to a wider community of educators across the nation. The potential application of the software would also reside in the area of practice of geotechnical engineering. Industry and business, which do not have a "teaching hospital" or similar resources to train engineers, would in all likelihood respond positively to potential project cost-saving with the software and appreciate the quality as well as capability of graduates trained in computer-aided design.

Judith Keough, R.N., Ed.D. and Xavier E. Cagigas, B.A.
UCSF-Fresno Alzheimer's Research Center (ARC)
Graduate Student Presenter

A Study of the Effectiveness of Introducing a Protocol for Coping with Agitated Behavior in One Skilled Nursing Facility

The purpose of this study was to compare the frequency and quality of including measures for agitation on the nursing care plans of patients after introduction of a research based protocol for behavioral intervention via staff focus meetings. The objective was to determine the effectiveness of staff forums as a way to institute change in practice. The design was a one group, two measures study, involving pre and post intervention comparison. Three focus meetings were held with the nursing staff to introduce, critique, and revise a research-based protocol for intervention in agitated behavior (Title & Mentes, 1999). Two measures of change were used. The MDS Quarterly Assessment Form, a computerized system used in long term care facilities to monitor the status of the patients, was used to identify patients displaying agitation. The nursing care plans of these patients were then reviewed to determine whether critical elements of the protocol were present. Several findings of the study have implications for long term care of patients with dementia. First, the frequency or incidence (70%) of agitation in this patient population did not decline; thus, it is an important issue for the nursing staff. Second, the quality of the nursing care plans related to the critical elements did improve indicating a positive response to change. The receptivity of the nursing staff to discuss, offer suggestions, and adopt a new protocol offers hope for change in other areas of care. However, several events which occurred during the conduct of the study may also have influenced its results: change in staff turnover rate, two personnel changes in the inservice educator, and one change in the director of nursing service. Although personnel responses to these changes were not formally elicited, there was much "talk" in the facility about them indicating a high level of awareness.

Alexander D. Candia, Roy E. LaFever
California State University, Bakersfield
Department of Chemistry
Undergraduate Student Presenter

Role of Metal Ions in the Biosynthesis of the Diterpenoid Marrubiin in the Common Horehound(*Marrubium vulgare*)

The compound marrubiin is a diterpenoid that is produced by specialized cells on the leaf surface of several plants in the mint family. Most notable, the common or white horehound, a plant with a long medicinal tradition, accumulates appreciable quantities of this highly functionalized compound. Previous research has shown an absolute requirement for divalent metal ions in the first committed enzymatic reaction en route to marrubiin. In this study a method has been developed for the conversion of premarrubiin to marrubiin in plant extracts and the subsequent determination of marrubiin by HPLC. This methodology was applied to extracts from plants grown under conditions of differing metal ion availability. The results of the analysis are consistent with the findings at the enzymatic level, indicating a significant difference in the quantity of marrubiin produced depending on the type and concentration of metal ions present in the growth media.

Genett Carstensen, Dave Goorahoo,
Ed Norum, and David Zoldoske
California State University, Fresno
Center for Irrigation Technology (CIT)
Graduate Student Presenter

Using Air in Sub-Surface Drip Irrigation (SDI) to Increase Yields in Bell Peppers

Modifying root zones of plants has long been a subject of interest among growers and researchers. Well-aerated soil is known to provide a generally better environment for root development and plant growth. Unfortunately, single purpose air injection systems have typically proven too costly for successful commercial application. With advances in subsurface drip irrigation (SDI) technology that could change. The concept of aerating the irrigation water has the potential for the air to move with water within the root zone more generally and affect crop growth. Production trials featured injection of air into drip lines, so that the water applied had a volume of approximately 11 percent air. For air injection into the drip lines, a manifold was constructed using a Mazzei model 584 differential pressure injector. Irrigations were conducted every seven days using reference Evapotransporation (Eto) information. The experimental plot was one-quarter acre. Soil cover over the drip line was five to six inches of sandy loam, and plant rows were 190 feet long. Treatments consisted of SDI with untreated water and SDI with 11 percent injected air. Treatment plots consisted of two rows per treatment, with four replications of each treatment. Harvest data for one growing season showed that bell pepper plants irrigated with the aerated water produced 33 percent more peppers, with 39 percent greater weight, than plants irrigated with non-aerated water. In addition to yield data, there was greater dry weight and larger root mass in those plants that had received aerated water. The major effect of the injected air was within the first 150 feet of the drip tape inlet. The small-plot results are sufficiently encouraging to justify further trials on a larger plot approaching commercial scale, where rows can extend as long as 680 feet.

Shan Chin
California State University, Fresno
Craig School of Business Honors Program
Undergraduate Student Presenter

Is Corporate America Ready For The "Telecommuting Village"?

Despite all the voluminous research and studies that have reported the benefits of telecommuting, there has been little empirical research that investigates the potential economic gains to employers by implementing a long-term telecommuting program. Another issue of concern, perhaps even more critical to this study, would be the factors that slow down the expansion of telecommuting practices. Based on those concerning issues, the following objectives/hypotheses will serve as the focus for this study: [1] employers of an institution (private or public) would have more difficulties identifying the bottle line benefits (e.g. savings on real estate cost, etc.) of a telecommuting program than their employees who are engaged in the program; [2] the study will compare and correlate the costs/benefits of part-time and full-time telecommuters. I suspect there will be a positive correlation between the benefits and the higher number of days employee telecommutes. Lastly, the data gathered will also be used as a foundation for future feasibility studies on measuring the acceptance level of private and public sectors to consider participating and investing in the construction of an actual 'Telecommuting Village' for their employees. In order to measure those hypotheses, two surveys were written and administered to gather data from two different groups of participants. One of the surveys was titled "Telecommuting Program Survey" that was intended for either the Chief Operating Officer or the Telecommuting Coordinator at the company to fill out. The other survey was titled "Telecommuters Survey", which was given to any current or former telecommuter at the company to evaluate their experience with telecommuting. Once the participants were identified and the surveys were completed, it was sent out to a list of 158 companies that was obtained from Susan Tierney, Marketing Coordinator at Valley Metro Regional Public Transportation Authority in Phoenix, Arizona. Those companies on the list were educated and encouraged by the Transportation Authority to implement a telecommuting program as an alternative solution to help reduce traffic congestion and pollution. A total of 850 surveys were sent out to those companies across all industry types to achieve unbiased random selection.

Howard O. Clark, Jr.
California State University, Fresno
Department of Biology
Graduate Student Presenter

San Joaquin Kit Fox and Non-native Red Fox Interspecific Interactions

The San Joaquin kit fox (Vulpes macrotis mutica) is a federally endangered and California threatened species occurring in the southern San Joaquin Valley in California. Threats to this small fox are loss of habitat due to agriculture, industrialization, and urbanization. Pesticide and rodenticide use may also constitute a threat to kit fox survivability as well as predator control programs. Competition from other predators, primarily the coyote (Canis latrans), have been identified as a threat to kit foxes. Red foxes (Vulpes vulpes) present potential threats as well, however, little information is known concerning the interference and resource competition between these two foxes. A family group of kit foxes and a family group of red foxes were radio collared in 1998 and 1999 in Lost Hills, Kern County, California. These foxes were tracked throughout the year. Spatial overlap via home range analysis is evident between the species. The non-native red fox may have a significant effect on the recovery of the endangered native San Joaquin kit fox by way of interspecific interactions.

Barbara Dahl. M.A., Robert Wells, Ph.D.,
Stephen Wilson, M.D.
Valley Children's Hospital

Utilizing Clinical Pathways for Pediatric In-patient Care

This study was conducted to determine if the use of a clinical "pathway", designed by a hospital team of physicians, nurses, respiratory therapists, and pharmacists incorporating National Institute of Health Guidelines, is advantageous in terms of quality and cost for the inpatient care of bronchiolitis. Patients who met criteria for pathway inclusion but were not placed on the pathway were matched for age, severity of illness, family income and insurance status with patients placed on the pathway. All 181 subjects were infants between the ages of 1 and 6 months who were hospitalized with a diagnosis of bronchiolitis during the Winter of 2000 at Valley Children's Hospital. Using statistical analysis to determine differences between the two groups, findings indicated that subjects who were put on the pathway had significantly lower costs and significantly shorter hospital stays without any concomitant significant increase in return rates to the hospital or emergency room. Furthermore, the use of unnecessary antibiotics and steroids was significantly lower in the pathway group, and the use of appropriate medication significantly higher. It was concluded that using the clinical pathway was advantageous for both cost and quality of care for a population of hospitalized pediatric patients with bronchiolitis.

William H. Dailey, Jr., GS MPA
California State University, Fresno

An Assessment of Public Transportation Needs of the Aging Population in Fresno and Madera Counties, California

This research study focused on identifying the transportation needs of an increasing aging population, looking at the aging cohort demographics, individual needs, societal factors, and transportation aging issues. Two survey methods were used in gathering information and data collected for the statistical analysis of transportation needs of elderly individuals. First, six focus group's were established to identify transportation needs of urban/rural communities throughout Fresno and Madera counties in California. Second, a Transportation Needs Survey was developed, distributed, and collected to analyze aging issues facing the aging population entering into the 21st century. Key aging transportation issues reflect participants' responses. For example, when asked "At what age do you feel the elderly should stop driving?," participant responses show that among women 34% felt one should stop driving between the age of 65-85 years of age, while only 17% of men had similar responses. 28% of men felt one should stop driving between the ages of 91-95 years of age. When asked "Who would influence your decision to give up driving?," 87% of the survey responses show that they would listen to the recommendation of their personal physician over a family request to give up driving. Another area of interest was how the five "A" factors influence the use of alternative transportation. The five "A" factors include availability, acceptability, affordability, acceptability, and adaptability. These key aging factors will influence a senior's decision to use alternative modes of transportation when they utilize programs and services to maintain their quality of life as they choose to age in place. Individuals desire to maintain their independence; mobility needs affect their quality of life as they continue to age in place. Identification of alternative transportation systems and resources will assist aging cohorts to utilize alternative transportation resources as they deal with individual transportation needs.

Diane Decker, Lecturer; Tom Burns, Lecturer
California State University, Fresno
Craig School of Business

An Ongoing Study of Student Needs To Fit the Changing Student Segments at Craig School of Business (CSB)

This is a continuing study of the needs of individuals attending the Craig School of Business (CSB). In this study we focus on the career needs of international students attending CSB, both during the school experience and in preparing for finding a job.

A survey was given to international students in the Craig School of Business. Questions were asked to determine students' demographics, their desired plans for work after graduation, and what, if any, obstacles they might face in obtaining those plans.

A majority of the total students surveyed desired a career with a corporation in a developed country, the vast majority with an American corporation in the United States. Most of these students had a desire to live in the U.S. for an initial time, however, in the long-term wanted to return to their country while continuing to work for the same developed country corporation. In addition, in a review using only the lesser developed countries (LDCs), the above stated results showed an even greater significance. Another interesting result from the study indicated that all female students from LDCs chose to work or continue in school in the U.S. (except where they could return to their home country to work in a family business).

Our initial conclusion from this survey is that we should, from an educational standpoint, primarily be orientating international students to businesses in the U.S. or developed world countries. Additional research will focus on U.S. corporations needs and determining whether there is a match with the needs of CSB international students.

Rodrigo DeZubiria, MD;
Samuel O. Leon, MD;
Davin Youngclarke, MA
UCSF-Fresno Family Practice Residency Program

Physician Attitudes About Palliative Care and Hospice Programs

Purpose: Physicians in training are routinely caring for terminally ill patients. Most medical schools and residency programs are in the process of instituting palliative care as part of their curricula. It is well documented, however, that palliative care is poorly understood and practiced in most teaching hospitals in the U.S. The aim of this study is to measure physician's attitudes about hospice and palliative in the UCSF-Fresno Medical Education program.

Methods: A questionnaire was developed to assess attitudes about palliative care and hospice. The questionnaire will be distributed to faculty and residents of our seven residency programs: Family Practice, Pediatrics, Emergency Medicine, Surgery, Psychiatry, Internal Medicine and Obstetrics/Gynecology. Completed questionnaires will then be evaluated in order to determine whether differences exist in attitudes among physicians in different medical specialties and between faculty and residents.

Results: Two sets of analyses will be performed. A quantitative analyses will be done for individual items and totals in order to determine whether differences exist between faculty and residents, Medical Doctors vs. Doctors of Osteopathic Medicine, doctors across primary care specialties, male vs. female doctors and doctors of different ages. A qualitative analyses will also be performed on the formal comments received in order to describe thematic elements.

Conclusion: Hospice care and palliation at end of life are becoming more important to primary care physicians. Results from this study will be used to assist in the development of curriculum for primary care residency programs in order to increase knowledge and awareness among physicians. Good curriculum regarding hospice care and palliation can only be crafted with an understanding of faculty and resident attitudes and biases. The general public dealing with end of life issues will be better equipped to make decisions regarding end of life care through understanding the attitudes that physicians have which may affect their medical care.

Salvador Diaz
California State University Fresno
Department of History
Graduate Student Presenter

Hernán Cortes and His Place Among the "Great Men" in History

In an era when the conquest of the New World had become a hackneyed enterprise which could hardly provide opportunities for men to break from economic confines and rise to the occasion, Hernán Cortés created his own history. Far from the typical attitude and behavior of his contemporaries, he became an archetype–the standard to be emulated by those who dared to follow. His venture injected new life into what had become a stale lifestyle that, like a plague, infected the colonies of the Indies. In the twenty-five years after Columbus, Spanish cavaliers had poured into the Americas by the thousands in search of adventure. Yet for every one who carved a place for himself in the burgeoning colonial society, hundreds returned to Spain disillusioned and thousands died miserably in shipwrecks or in the jungles of the Caribbean. The Spanish adventurers who crossed the western horizon with proud aspirations of lordship found themselves settling for becoming farmers, pig-herders, slave-traffickers, or if lucky and mildly educated, working as government officials. Where was the fabled land of adventure where a chivalric gentleman could heroically fight against barbaric hordes and encounter wealth beyond imagination? In the spring of 1519 Cortés turned the fleeting mirages of empires and heroic battles into reality. He imbued order and purpose into the confused Spanish imperial adventure that had become bogged down by judicial procedure and corrupt management. By defying the stubborn local authority and modifying the contemptuous relationship between Spaniards and natives, he succeeded where previous expeditions had failed. Through careful study of the primary sources, this presentation will argue that Hernán Cortés' actions reflect a man of decisive action, courageous and unwavering in the face of an insurmountable challenge, and aware of the valuable contributions of his native allies. Though unjustly vilified by modern generations, his role in history deserves re-evaluation, and his legacy–for better or worse–merits acknowledgement.

Curtis J. Eastin
California State University, Fresno
Department of History
Graduate Student Presenter

The Horns of Greek Battle-Lines

In 479 BC, as the coalition militias of the Greek city-states prepared to meet the great invasion force of the Persian Empire, there was little doubt as to who among them would hold the most honorable position on the right-hand side of the unified Hellenic forces. Spartans, we are told, were regarded as the preeminent troops in all Hellas. Indeed, around Lacedaimonia there developed a mystique, and it has become doctrine for historians, both ancient and modern commentators alike, to regard the Spartiates as the undisputed best army throughout the age of the hoplite infantry-man. Whether or not that assumption is true is in itself interesting to consider; but, more fundamentally, problems relating to phalanx organization may reveal not only answers to questions about military supremacy but also larger queries as well. The tradition of placing the bravest or most skilled fighters on the extreme ends of the phalanx is a matter that is central to the organization and outcome of hoplite battle. Accordingly, it is a subject worthy of revisiting. When the practice is examined closely, it becomes all the more vexing to seek a comprehensive explanation for the purpose and the origins of this custom—one that was at the same time pragmatic and inefficient.

C.J. Fiorentino, and S.A. Kovacs
California State University, Fresno
Department of Biology
Graduate Student Presenter

Early Onset of Lupus Symptoms in MRL/lpr Mice correlates to the Production of IgG Antibodies Cross-reactive with both Cyanobacterial and Human (HeLa) Nuclear Extracts

Systemic lupus erythematosus (SLE) is a systemic autoimmune disease in which individuals produce antinuclear antibodies (ANA) against small nuclear ribonucleoprotein particles (snRNPs). A form of eukaryotic snRNP, i.e. U1snRNP, seems to exist in a prokaryotic cyanobacterium, *Synechococcus leopoliensis*. A recent study showed that inoculation with crude cyanobacterial extracts accelerates the onset of SLE symptoms in a mouse genetically prone to spontaneous SLE, i.e. MRL/lpr, but not in a mouse without a SLE genetic predisposition, i.e. Swiss-Webster (SW). This study follows the humoral immune response after inoculation of either MRL/lpr or SW mice, with either cyano-bacterial, eubacterial *(E. coli)* or human nuclear extracts, and correlates ANA levels and cross-reactivity with the onset of SLE clinical symptoms.

MRL/lpr and SW mice were inoculated with cyanobacterial, *E. coli* or human nuclear extracts at 4 weeks of age, which is significantly prior to spontaneous ANA in MRL/lpr mice. The humoral responses were evaluated by Enzyme-linked immunosorbent (ELISA) assays, on sera collected over the next 12 weeks, using either cyanobacterial, *E. coli* or nuclear extract from human cancer cells (HeLa) as the assay antigen. Clinical symptoms associated with SLE were monitored during the serum collection procedures.

Early onset (2-4 weeks post-inoculation) of the clinical symptoms of SLE, principally skin rashes and hair loss (alopecia), were observed in all MRL/lpr mice injected with cyanobacterial or HeLa extracts. The SW mice never showed signs of Lupus. The humoral response of IgG titers against the inocula was evaluated, and a classical primary immune response was observed in SW mice (peak 8 weeks post-inoculation) inoculated with any of the extracts. MRL/lpr mice injected with *E. coli* extracts also exhibited a classical primary immune response. In contrast, MRL/lpr mice inoculated with either HeLa or cyano-bacterial extracts had continuously increasing titers throughout the12 week post-inoculation period. When the cyanobacteria-inoculated MRL/lpr sera were evaluated in ELISA assays with HeLa as the antigen, the IgG titers increased until sacrifice; MRL/lpr mice inoculated with human snRNPs produced ANA cross-reactive with cyanobacterial antigen. Inoculations of *E. coli* (which lack snRNPs) into MRL/lpr mice did not produce this cross-reactivity to HeLa cells.

All extracts are clearly immunogenic, but the MRL/lpr cross-reactive response to cyanobacterial or HeLa extracts means that such inoculations in this model mouse may provide further clues about the pathogenesis and onset of SLE autoimmunity.

Diana A. Foster, M.P.H., Vickie D. Krenz, Ph.D.,M.S.P.H.,
Donald D. Pogoloff, JD.,M.P.H., Donna M. Callhan, M.S.W.
California State University, Fresno,
and Fresno Pacific University

Youth Violence: An Inner-City Conflict Resolution Training Program, in a Rural Multicultural Elementary School

Violence on a school campus is a multifaceted phenomenon impacting upon the school and the community. According to the CDC, aggression or association with those engaged in high risk asocial behaviors observed in early childhood can lead to violence, social and cognitive deficits. These students are at risk for low academic attainment, self-esteem, poor hygiene, unexcused absences, tardiness, truancy, and acting out in the classroom and playground. The Conflict Resolution Training Program, a problem-solving violence prevention curriculum is based on Bandura's Social Learning Theory, self-efficacy construct and Bloom's Taxonomy. This study investigated the effectiveness of the Conflict Resolution Training Program among rural multicultural elementary school students. The initial subjects consisted of one hundred fourth and fifth grade students, with 24.5% Native American, 1% Asian, 4.1% Hispanic and 68.4% White. This group change at the third year by 17% Native American, 0%Asian, 6%Hispanic and 76%White. A nonequivalent control group quasi-experimental design was utilized to determine the effectiveness of the program at the third year interval. Pearson Chi-square with Yates Correction factor was applied to determine statistically significant differences between the measurement intervals. Preliminary findings indicated a statistically significant increase in academic attainment, hygiene, self-esteem, and positive classroom/playground behavior internalized by the student and applicable in various setting prone to conflict and violence. These findings were maintained in the now seventh graders but significantly abated in the now eighth graders; a finding worthy of further study. These findings indicated a statistically significant increase in student ability to solve problems in a peaceful manner, in an educational setting, different from the inner-city environment for which CRTP was initially intended.

Wendy Garbarino, Steve Roberts,
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Goal Setting and Achievement in Children and Teenagers Hospitalized for Traumatic Brain Injury

Children and teenagers who sustain significant head injuries typically lose functional skills that must be re-trained by experts in pediatric rehabilitation. To help measure functional skills, the staff of the Rehabilitation Department developed and tested The Functional Rehabilitation Evaluation of Sensori-Neural Outcomes (FRESNO). This instrument includes 196 items on scales measuring Motor, Self Care, Social, Communication and Cognition. When a child is admitted to the Rehabilitation Unit, this measure is scored within the first few days and goals are set for the child's potential return of function. At discharge and during outpatient follow-up visits, the FRESNO is re-administered. This study reports on the extent to which patients with a traumatic brain injury met their goals while hospitalized and after discharge. The progress of sixty-four patients with a mean age of 11 ? years served as subjects. Patients were hospitalized for a mean of 41 days. Goals that were established at admission were met at discharge in most functional domains including motor skills, self care skills and social skills. At discharge, there were statistically significant differences between goals and achievement on measures of expressive language, executive function and interaction ($p < .05$), suggesting that these functions had not returned as rapidly as hoped for by the staff. For the 58 patients seen at follow-up (averaging 10 months after discharge), patients demonstrated continued return of function with statistically significant improvements in self care, cognition, mobility, locomotion, attention, executive function and interaction. All goals established at admission were met by the first follow-up. For the 29 patients seen for a second follow-up visit (averaged 16 months after discharge) there were no statistically significant improvements, suggesting a plateau in recovery. These data suggest that inpatient rehabilitation services are highly effective in helping pediatric patients with traumatic brain injuries recover their motor, self-care and social functioning. It appears to take longer for patients to achieve their goals in expressive language skills, executive functioning and interaction. Despite their failure to achieve these goals while in the hospital, the data suggest that patients eventually attain a return of these functions within the first 10 months after discharge. This data may be helpful in assuring families about their child's recovery and in tailoring inpatient rehabilitation services to optimize efficiency.

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Undergraduate Student Presenter

Evaluation of Skin Flaps Using Video Microscopy to Predict Flap Viability

Background: The micro-circulation of organs is critical to normal function. Skin flaps are commonly used to repair damaged tissue. This study was conducted to image the micro-circulation of skin flaps. Four different anesthetic agents were used to determine their effect on skin flap survival. Furthermore, the flap viability was compared using video microscopy.

Methods: Subjects were anesthetized and had a full-thickness skin flap elevated and replaced. They were given the following anesthetic agents (with different properties) at the doses shown. Ketamine/xylazine at 65 mg/kg and 1.0 mg/kg, respectively, intramuscularly; propofol at 100 mg/kg intraperitoneally; pentobarbital at 50 mg/kg intraperitoneally; or isoflurane by mask to effect (approximately 3% of inspired air). The skin flaps were imaged using a Cytoscan video microscope, which magnified the study area 167X. Flaps were imaged at one hour, six hours, and 24 hours after the flap elevation. At 10 days post surgery, the flaps were measured for survival.

Results: At one hour post surgery, blood clots were easily visible using microscopy. Areas of the flaps that were predicted to survive to evaluation day (10th day) were seen to have good capillary blood flow. Propofol, which has been reported to have radical scavenging abilities, produced the greatest percent of flap survival. The use of propofol increased the chances of flap survival up to 40% as compared to controls ($P<0.05$). Other anesthetics used here resulted in significantly less flap survival.

Conclusion: Good vasculature (capillary network) is needed for flap survival. The video-imaging technique employed in this study allowed for examination of the micro-vasculature. The use of propofol, as an anaesthetic agent and a probable free radical scavenger, produced the greatest flap survival. This was confirmed using video images, and fluorescein with visual inspection at day ten. Surgeons can use this technique to assess early changes in microvascular flow that can occur in various surgical procedures.

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Graduate Student Presenter

Effect of Muscular Dystrophy on Phosphoglucomutase Activity in Brain and Breast Muscle of Embryonic and Posthatch Chick

The activity of phosphoglucomutase (PGM), a glycolytic enzyme, has been reported for normal brain and breast muscle of embryonic chick as a function of developmental age. Also, phosphoglucomutase activity has been reported in posthatch breast muscle of dystrophic chicken. The purpose of the present study was two-fold:

1. To demonstrate abnormal activity in embryonic brain tissue of chickens with inherited muscular dystrophy.
2. To demonstrate that abnormal activity in dystrophic brain precedes abnormal activity in dystrophic muscle during the course of development.

The assay method used for phosphoglucomutase activity was that of Najjar with a few modifications. Essentially, a volume of crude homogenate is mixed with Magnesium Sulfate, Mercaptoethanol and a saturating amount of glucose-1-phosphate (the substrate). The mixture was incubated for 10 minutes and the product formed (glucose-6-phosphate) was determined by copper reduction methods.

The results obtained in this study support the hypotheses stated above, namely: There was significantly different activity in dystrophic brain throughout the developmental period studied (8-24 days post setting), and the abnormal activity in muscle was not evidenced until 24 days post setting. Also, a paired difference student's t-test indicated a highly significant difference in the grouped control and dystrophic data.

In drawing conclusions from this study, care must be taken. For one thing, the abnormal brain activity goes from below normal at 8 and 9 days to above normal after 12 days. With the paucity of information at hand, it is difficult to explain this anomaly. However, although the phosphoglucomutase enzyme is probably not defective in itself, it can be used as a "marker" to indicate where and when in development further study is warranted.

Jayson Hardcastle, Patricia Chavez, and Linda Wells
California State University, Bakersfield
Undergraduate Student Presenter

Phenotypic Characterization of the dumpy Phenotype in Drosophila melanogaster

Temperature has a critical effect on ectotherm development, size, and gene expression. In a broad survey of ectotherms, from nematodes to amphibians, Atkinson has demonstrated that there is an inverse relationship between rearing temperature and adult size. This phenomenon has been demonstrated in Drosophila as well. French, Feast, and Partridge showed that at16.5o C there is a 5% increase in thoracic size, a 10% increase in abdominal segment A-5 size, and 33% increase in wing size. At 29o C, they found a 5% reduction in wing size. Temperature has also been found to regulate gene expression in Drosophila. Silber, et. al., found that temperature regulates expression of the Drosophila vestigial gene in the wing disc. We are interested in the effect of temperature on the dumpy phenotype in Drosophila. Wilkin, et. al., have recently cloned the dumpy gene, and predict that it is a membrane-anchored fiber that may insert and crosslink within the cuticle. They propose that it may provide a strong anchor for underlying tissue and maintain mechanical tension at sites under stress, mechanically regulating tissue morphogenesis. To test this hypothesis, we have developed a new assay to measure maximum tensile strength of adhesion in Drosophila thoraces, and are performing this assay on wild type and dumpy flies grown under different temperatures. We measured the body and wings of dumpy and wild type flies grown at different temperatures, to test whether there was a temperature effect on the dumpy phenotype. We have performed adhesion strength assays on these flies as well. For the temperatures finished to date, the inverse trend normally found between size and temperature has been replicated, with a significant difference between the means of dumpy and wild type flies. The microscopy data gathered to test the new method show that it seems to be measuring attachment strength. The tension assays show an interesting positive correlation between size and attachment strength of the muscle to the cuticle, with a significant difference between the means of dumpy and wild type flies. The dumpy and wild type flies exhibit different wing sizes, but both follow the classic invertebrate relationship between rearing temperature and size. The adhesion strength assay works well, and shows an interesting positive correlation between strength of attachment and rearing temperature, suggesting that Wilkin's hypothesis is correct.

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Joint Doctoral Program in Educational Leadership
Doctoral Student Presenters

Joint Doctoral Programs: Collaboration While Co-mingling University Missions

Today higher education in the United States is faced with rising enrollment demands. As a means of efficiently and creatively meeting graduate education needs, universities are collaborating on doctoral programs. In California, although the sole authority for granting doctorates in the public sector belongs to the University of California (UC), joint doctoral programs may be developed between UC and the California State University (CSU), and between CSU and independent private universities. Currently there are sixteen joint doctoral programs in existence in California, with one existing between CSU Fresno and UC: the Joint Doctoral Program in Educational Leadership (JDPEL). Development and implementation of these UC/CSU joint programs frequently involve lengthy, complex collaborations between universities. In order to gain an understanding of the challenges and factors that influence universities' collaborations on joint doctoral programs, a study was conducted in spring 2000 using interviews with fourteen university leaders. This presentation discusses several critical issues and factors that were found to influence effective collaborative planning and implementation of joint doctoral programs. The research study for this presentation was published in the International Journal of Educational Management (IJEM) in March 2001.

Corrie Matlock-Hightower, Robert Wells,
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Assessing and Improving Asthma Caregiver Competence

Asthma is one of the most serious childhood chronic diseases, leading to substantial morbidity and mortality. To date, there has been very little empiric attention to developing reliable and valid measures for determining the relative competence of parents who care for children with asthma. In addition, there are very few comparative studies to help determine which educational approaches are most helpful toward improving asthma caregiver competence. This study was designed to: (1) assess the reliability and validity of an objective measure of asthma caregiver competence, and (2) to utilize this measure to compare the effectiveness of individual vs. group instruction in asthma management. The parents of ninety-six patients who were admitted to Valley Children's Hospital served as subjects in this study. Parents were randomly assigned to receive either individual instruction in asthma management or were enrolled in a small class offering the same instructional material. Prior to receiving this instruction and three months after discharge, research assistants who were blinded to the type of educational instruction, administered the Asthma Caregiver Competence Tool (ACCT), a 15-item measure of knowledge and skills. The results suggested that the ACCT is an internally consistent (Alpha = .87) instrument with good inter-rater reliability (91% agreement on all items). There were no statistically significant differences between parents' improvement in their competence based on whether they received individual or small group instruction. Both samples demonstrated significant improvements in competence. The more educated parents demonstrated a significant improvement when receiving individual instruction, as compared to group instruction ($p < .05$). This same difference was not present for the less educated parents. It was concluded that the ACCT is a reliable and valid measure of caregiver competence. The relative lack of a difference between individual and small group education suggests that small group education should be the standard of care and health care providers should be willing to provide more individualized instruction for parents seeking more specific information.

Kristi Hill
California State University, Fresno
Department of English
Undergraduate Presenter

Poets, Farmers & Statesmen: An analysis of the political implications in the first book of Virgil's *Georgics*

Georgic literary tradition can be traced to Archaic Greece. In fact, the word *geôrgos* is the Greek word for farmer. It may seem that a work on husbandry would be dry at best, and a cursory reading through Virgil's *Georgics* may lead one to believe that it is simply a poetical "how-to" manual on agriculture. Knowledge of the popularity of such didactic texts in first-century Rome would further support this notion. Yet the great Roman poet Virgil was exactly that: a great Roman poet. Rather than a simplistic didactic poem, the *Georgics* is a contemplation of the political, moral, religious and philosophic questions facing contemporary Rome. It is at once a masterful work of art and a philosophical treatise on political thought that delves deep into the core of human nature. It is an exploration of the relationships between man and nature, man and man, and ultimately, man and his self. This essay will focus on the political immediacy of the first of the four books, and its relevance to contemporary Rome. Here the poet emerges as a keen critic of mankind's greatest pathology, war, and how war is tied inextricably to even the best of what Virgil's society had to offer. Induced, no doubt, by the turmoil of the final years of the Republic, the poem is both a search for answers—perhaps to be found in the past—and a call for action. And though the *Georgics* had urgent implications for the Rome that Virgil knew, the paradox posed in the poem is philosophically timeless and universal to all of mankind.

Ivan Hoong
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Craig School of Business Honors Program
Undergraduate Student Presenter

Differences In Effectiveness Between Computer-Based Training And Instructor-Based Training for Computer Software

Usage of computers-based training (CBT) in education has been increasing along with the advancement in computer technology. However, is computer-based training effective and beneficial to students? This study reviews the related literature and performs an empirical study of CBT effectiveness for teaching end-user application software in a college-level lab session. This research focuses on those students who are taking IS 50 (Computer Concepts) class in the Spring 2001 semester. This is an information systems class that is required for all business major students. However, the research sample is diverse in terms of majors and further options since this course is not restricted to business majors. Students in this course are required to participate in a lab session where they can learn to operate under Windows environment and Microsoft Office 2000 (Microsoft Word, Excel, Access, and PowerPoint). To date, the lab sessions of this course have been taught by teaching assistants with the use of computers assigned to each student. Students in the traditional lab setting are the control group in this research. On the other hand, two sections of lab (experimental group) were assigned to participate in CBT. The CBT sections of lab were not announced to students during registration to avoid bias of students' interest and perception toward CBT. The experimental group learned about the situation at the first day of the lab session, and transfer was minimal. Throughout the semester, the performance of these groups of students are measured and compared through quizzes or tests.

Besides measuring the results of the quizzes and tests, the students' attitudes and reactions towards CBT will also be compared and analyzed. Two surveys are used for this experiment. The first survey was a self-report survey, which was given out at the beginning of the semester. It obtained information about the students' demographic and computer background. This self-report survey was analyzed to ensure that both the experimental and control groups are equivalent, which is the case in this experiment. The second survey will be given out to both groups in April and will ask questions about their experience with the lab session. The second survey for the experimental group will also ask the group to evaluate the CBT session and the software package used for the lab session. The research results obtained so far after the exam for Microsoft Word show that CBT is effective, that it can replace the traditional lecture format, yet provide quality education. More analysis will be performed after the Microsoft Excel exam in the beginning of April.

Angela Jackson
San Jose State University
Graduate Student Presenter

From "Nigger" to "Nigga": The Use of the Word Nigger in 19th Century Blackfaced Minstrelsy and Hip-Hop Music

The word "nigger" and its' meaning has experienced several mutations, especially in the world of music. It has evolved from having one distinct implication to a multitude of variations. The focus of my research compares the use of the word "nigger" in nineteenth century blackface minstrelsy to its' use in hip-hop music. My hypothesis is that the use of the word "nigger" in nineteenth century blackface minstrelsy was clearly derogatory and offensive toward people of African descent in America. In hip-hop music, it has several different usages and definitions. This hypothesis is illustrated by first presenting the origins of the word "nigger," and a brief overview of nineteenth century blackface minstrelsy and hip-hop music. With a lyrical analysis, I will compare the use of the word in both types of music exploring the meanings within each type of usage of the word. Included in my research are interviews with a small community of people that provide valuable perspectives about the use of the word. Hip-hop artists, hip-hop consumers, music enthusiasts, and a professor knowledeable about nineteenth century blackface minstrelsy were among those selected to provide their unique and diverse opinions, thoughts, and experiences with the word "nigger." I hope to shed light on this issue and contribute to the on-going discussion of the use of this ever-changing word that will not disappear from America's vocabulary and consciousness.

Wendy Jackson,
Dr. Denise Patterson (Faculty Mentor)
California State University, Fresno
Craig School of Business Honors Program

Accounting for Goodwill In Business Combinations

Throughout time business executives have worked to create value within their company. During the industrial age a company's value was created through physical assets such as land and capital. We have moved into an economic time commonly referred to as the "new economy." Businesses now place more emphasis on intangible assets such as employees, brand name, and organizational ideas. During an acquisition, these intangible assets are included in the purchase price and called goodwill. In many combinations, goodwill has become a significant portion of the purchase price.

The Financial Accounting Standards Board (FASB) is currently reviewing standards on business combinations and treatments of goodwill. This action by the FASB has prompted scholars, businessmen, and Congress to debate the best policy for this issue. Possible treatments of goodwill include expensing it evenly over different time periods, or permanent capitalization.

As these issues are addressed and accounting standards are promulgated, it is important to determine how changes in accounting for goodwill may affect the companies involved. The purpose of this study is to determine how the proposed accounting treatments affect the financial ratios of acquiring companies. Insight as to how accounting standard proposals may affect the company can be made by determining the relative effect on common valuation ratios. Such a comparison will also provide more information from which to make decisions on the accounting standards changes.

This exploratory research examines five common valuation ratios including earnings per share. Data was collected from acquisitions occurring in 2000 within the S&P 500. The financial data of each company was then transformed to reflect the different goodwill treatment proposals. Then the valuation ratios under each treatment have been calculated.

Ly Chong Jalao
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Graduate Student Presenter

V.S. Naipaul and Postcolonial Fragmentation

V.S. Naipaul's novel, In a Free State, deals with postcolonial subjects and their material and psychological situations in a decentered world. After World War II, as colonies throughout the world reclaimed their independence, and imperial powers retreated and left behind void and chaos, the material disruptions of entire societies had tremendous repercussions at the mythological level as well. In Naipaul's novel, the main characters wander aimlessly, uprooted from their physical origins as well as from the mythological and symbolic contexts that gave meaning to their lives. Critics of Naipaul sees the negative ways in which he represents those postcolonial subjects as an obvious racism on the part of the exiled writer from Trinidad. Those critics believe that Naipaul has betrayed his origins by adopting the racist and colonialist values of the British Empire. My argument is that Naipaul's attitude toward his characters-toward postcolonial subjects-is in fact a result of his yearning, not for British imperialism, but for order, even oppressive order; and more importantly, a result of his inability to build an alternative vision of the world based on the constructive and creative aspects of the people he writes about. Following from Michael Bakhtin's idea of the relationship between a symbol and its context, it becomes clear that Naipaul's postcolonial characters are tragically caught in their new contexts -as immigrants, refugees, or even former members of colonial powers; and their despair at the world stems from their inability to understand those symbols that gave meaning to their lives now that these same symbols have come to take on new meanings under new contexts. The tragic aspect of the characters in In a Free State, and of Naipaul as an exiled writer, is the absence of a real community, a localized vision of the world that would be required in order to counteract the void and apocalyptic future of the postcolonial world, and in order to resist regressing into the false security of imperial order.

Ray Johnson
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Department of History

Gnostics versus Christians: The Christians were smarter

Gnostics posed a dangerous threat to early Christians or Galileans because both groups were grappling for new converts. Even though both the Christians and many Gnostics used Biblical scriptures as a foundation for their beliefs, they often interrupted those scriptures in diametric light. The Roman government was frequently unable to distinguish between Christians and Gnostic and readily persecuted both. Christians found themselves being accused of performing Gnostic rituals, many of which offended virtually everyone except the Gnostic sect in question.

The Christians were able to overcome this early threat of Gnosticism by turning their inherent strength against Gnostic weakness. Many Gnostic sects believed strongly in sex, but were adamant about not producing children. Christians, on the other hand, welcomed children into the faith, "Suffer the little children, and forbid them not, to come unto me; for such is the kingdom of heaven" (Matthew 19.14). The Christians encouraged large families, thus expanding the early congregations. Where the Gnostic sects were limited to those who received revelation (gnosis), the Christians were open to all who received grace, "By grace are ye saved" (Ephesians *2.5).*

We have a tendency to focus our attention on Early Christian era Gnostics. I would suggest that we look to the Taiping Rebellion to find the largest concentration of Gnostics in history. Hung Hsiu ch'uan was taken to Heaven where he met with both God and Jesus. He learned that he was the younger brother of Jesus. Armed with this revelation, Hung became the Heavenly King, in the Heavenly Capital of Nanking. He commanded a standing army of 500,000 men and women and ruled over 10,000,000 believers. Hung Hsiu-ch'uan overcame the failure of the early Gnostics and established his Heavenly Kingdom on earth.

For successful modern Gnostics we need look no further that a young man in 1820 who received a direct revelation from God and Jesus, plus being given new sacred scriptures on golden tablets. The Church of Jesus Christ of Latter-Day Saints also overcame the label of heretical believers and eventually entered mainstream Christianity.

The Gnostics never really went away. They still lurk in the religious shadows, waiting for new revelations. But for a modem Gnostic sect to survive, it must emulate successful Christian organizations.

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Department of English
Undergraduate Student Presenter

"Beauty, and use, and harmony": Feminine and Masculine Romantic Androgyny

The myth of the androgyne has enticed philosophers, artists, and authors for centuries. It is no surprise, then, that British Romantic poets were as susceptible to its attractions as their Greek predecessors. Indeed, one need look no further than Wordsworth, Coleridge, Keats, Shelley, Byron, and Blake to discover the predominance of this metaphor in English Romantic poetry. To be sure most critics have done just that. For while numerous studies have examined the use of androgyny among the male Romantic poets few have explored its use in the works of their female counterparts. It will be the argument of this study that images of androgyny among women Romantic poets have heretofore been unexamined not because such examples do not exist but because the pattern of "feminine romantic androgyny" (FRA) is radically different than that which is typically found in "masculine romantic androgyny" (MRA). Androgyny as used by the principal male Romantic poets is consistently a symbolic representation of the unity of the masculine and feminine components of the poetic psyche -- a mental state they considered vital to artistic creativity and imaginative sustentation. As such, MRA was an artistic tool believed to enhance the quality and quantity of their art. It was not a "life" philosophy nor was it an attempt to improve their relationship with or understanding of women. In contrast, FRA was achieved not through a metaphysical union of abstract masculine and feminine characteristics within the mind of the individual but through the concrete union of a man and a woman resulting in a harmonious marriage of equals. Moreover, women Romantic poets not only used their communal version of androgyny to promote egalitarian marriage but also to unapologetically promulgate a social agenda of "domestic democracy" which extended the values of home-life to society at large. Therefore, FRA was not so much concerned with aesthetic principles as with amending what they considered societal ills.

Contemporary psychoanalytic theory suggests that the differences manifested in MRA and FRA were themselves precipitated by the emergence of separate spheres: the public/social sphere of men and the private/domestic sphere of women. This familial breach ensured the "mothering" of children by women and was accompanied by a proportionate withdrawal of men's parental influence. According to Carol Gilligan, the segregation of parental responsibilities based on gender creates a mother-daughter connectedness that is not shared by mothers and their sons. As such, girls/women develop an "ethic of care" which emphasizes interdependence while boys/men develop an ethic of individuation or separation. FRA's harmonic vision and MRA's inward orientation reflect this dichotomous value system.

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Ammonia Emissions From Nitrogen Fertilizer Applications- Field Sampling Methodology

The objectives of this project, funded by the California Air Resources Board, included determination of agricultural field sources, seasonal flux rates and a regional budget for atmospheric ammonia emissions related to applications of N fertilizer. Identification of sources, calculation of flux rates and a regional budget required the development of a database relating the crops, soils, type and application method of nitrogen (N) fertilizer along with estimates of fertilizer use from annual sales data. The field-sampling phase of the project was to measure the magnitude of volatile ammonia (NH_3) loss and its duration as a result of an N fertilizer application.

The first step in the project was to list those factors that influence N losses in a matrix and then select representative combinations from the matrix cells to monitor in the field. The factors identified were crop types, soil type, fertilizer forms and application methods. Ten crops, four soils and six fertilizers resulted in a matrix of 240 cells. The sampling period was the calendar year 2000, and twenty applications were sampled during that time. Sampling was done for two days prior to an application, through the application of the fertilizer and continued for an additional five days. A glass filter disk treated with citric acid was used to trap the NH_3 as air was pulled through it, in a process commonly referred to as active sampling. In the laboratory, the glass filters were analyzed for NH_3 concentrations and the NH_3 flux was calculated using wind speed data.

Ammonia fluxes were higher during fertilizer applications, but generally trends in gradient from soil to ambient atmosphere were similar before, during and after applications. The most striking characteristic of the data obtained so far is the consistent presence of an ammonia gradient that would seem to imply that the foliage and soil surfaces are acting as a sink for NH_3 even during the application period.

These results indicate that active sampling with citrate treated filters is suitable for quantifying ammonia emissions from field applications of N fertilizers.

Colby J. Linder and Dr. Brian Tsukimura
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Department of Biology
Graduate Student Presenter

Inhibition of ovarian reproductive development, by methyl farnesoate (MF), in the tadpole shrimp Triops longicaudatus

The tadpole shrimp (TS), Triops longicaudatus, are inhabitants of ephemeral bodies of water, such as the rice fields of California. Due to their rapid sexual maturity and large egg production, they are in a constant search for food. In doing so, they affect rice farming by knocking over developing seedlings. Our objective was to identify a natural reproductive regulator for this invasive crustacean. The hormone MF, a known crustacean hormone, was administered to growing juvenile TS. Aquatic vectors (Artemia nauplii) incubated in 0.05% albumin and 5 μg/ml MF for 2 hours, were fed to TS daily from hatching until 10 days of development. Oocyte development was observed by dissection at days 5 and 10. Body cavity examination of day 5 TS was a mean of 33.2 oocytes in the controls and 16.5 in the MF treated ($p<0.002$, ANOVA). Day 10 ovarian weight was reduced from a mean of 1.1 mg (controls) to 0.6 mg (MF treated) ($p<0.01$, ANOVA). There were no somatic effects (body weights and lengths) between control and treatment groups at day 5 or 10. To study efficacy in rice fields, MF was added to shrimp pellets with Tween-20 as a binding solution at two treatment concentrations [low-0.0001% = 1 mg MF/kg pellets (MFLo) and high-0.001% = 10 mg MF/kg pellets (MFHi)]. Lab tests of the pellets indicated the number of oocytes for MFLo treated TS at day 5 were reduced from the controls ($p<0.05$, ANOVA). At day 10, ovary weight also decreased ($p<0.01$, ANOVA), with no somatic differences. The MFHi treatment at days 5 and 10 resulted in differences in body weight, body length, # of oocytes, and ovarian weight, indicating a possible toxic effect. A random block design of 16 rings was set in a rice field to study the MFLo and MFHi pellet treatments. At day 5, MFLo and MFHi treatments decreased ovary weight. No somatic effects were detected with MFLo, however toxic effects were possible in MFHi. At day 10, significant block effects obscured any MF effects. MF appears to inhibit ovarian development when administered to juveniles. Supported in part by CATI, ASI, and Division of Graduate Studies grants.

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Standardiazation and Documentation of Nausea Assessments Using a Faces Rating Scale in a Pediatric Setting

Although there are numerous visual analogue rating scales for assessing nausea in adult patients, these tools are lacking in the pediatric setting. The purpose of this study was to design a standardized nausea assessment scale that would allow for quantifiable nausea assessment and documentation in pediatric patients.

Methods: Development of a 4-point rating scale for nausea assessment in children based on current adult nausea and pain rating scales. Using the scale, patient records were followed over two 4-week study periods (post group #1 and post group #2). Nursing records were reviewed regularly to collect data and ensure that the scale was used accurately and consistently. Retrospectively collected pre-nausea scale data was then compared to the two post-nausea scale data periods. In addition, following the initial study period, nursing and medical staffs were surveyed to evaluate scale utility and approval.

Results: Sixty-six subjects (22 in the pre-nausea scale group, 21 in post group #1, and 23 in post group #2) of the oncology and surgery wards were reviewed. In the pre-nausea scale group, nausea was assessed and documented 35% of the time while in both post groups #1 and #2, nausea was assessed and documented 100% of the time ($p<0.001$). A correlation between a high nausea scale rating and a greater number of emesis events and between a high rating and a greater number of interventions was also found significant ($p<0.0001$ and $p<0.005$, respectively). Use of the scale revealed that the number of emesis events decreased significantly in post groups #1 and #2 compared to the pre-nausea scale group ($p<0.002$ and $p<0.001$, respectively). The staff survey results showed that the scale was approved and found acceptable by nursing and medical staff.

Conclusion: The nausea assessment scale was a useful tool to improve comprehensive patient care. Future plans include a follow-up ondansetron medication use evaluation, scale use outcomes studies, and extension of the nausea scale protocol out of the oncology ward for hospital wide use.

Craig Longan
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Graduate Student Presenter

The Problems of Nationalism and National Security: The Two Essential Causes of World War I

The Outbreak of World War I was the result of two fundamental, intractable problems in European society. Nations were faced with the dilemma of how to provide for their security without simultaneously bringing on the war the security measures were designed to prevent. Countermeasures adopted by one state only inspired countermeasures by neighbors, which increased international tension. The growth of nationalism was a solution to certain problems in European society in the 18th and 19th centuries, but nationalism also carried within it the seeds of serious problems. The emotional volatility which the danger of nationalism reached a crescendo with the explosion of the First World War. The war and the peace settlement which followed it were intended to be solutions to the problems of nationalism and national security. They were not. A permanent peace of Europe could only be established when solutions for these two problems had been found.

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Department of Biology
Graduate Student Presenter

Cloning tfd Promoter Constructs in the 2,4-Dichlorophenoxyacetic Acid Pathway

2, 4-Dichlorophenoxyacetic acid (2, 4-D) is a synthetic compound used extensively over the past five decades as a herbicide and is subject to rapid biological degradation by certain soil bacteria. Studies show that bacteria capable of degrading 2, 4-D are able to assemble the pathway by obtaining the genes from different sources and coordinately regulating them (Fulthorpe, et. al, 1995). We are studying how these organisms regulate the mosaic assembly of genes by investigating promoter expression of the first three genes in the pathway. To accomplish this, we have inserted the promoter regions of tfdA, tfdB, and tfdC found in Burkolderia sp. RASC, and the promoter region of tfdB from R. eutropha JMP134 into the promoterless lacZ expression vector pKRZ1. The plasmid contains two different origins of replication and a site for conjugal transfer into most Gram negative bacteria. Preliminary assessment of promoter activity in E. coli suggests three levels of promoter expression in our five plasmids ranging from high to insignificant levels. From this we can conclude there is diversity of expression from different promoter regions.

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The Validity and Reliability of Program Quality Review As a Process for Educational Program Evaluation in California's Elementary Schools

Since 1977 California Education Code Section 64001(c) has mandated California public schools receiving consolidated program funds to conduct a Program Quality Review (PQR) every three years to evaluate the results of student learning in order to define school improvement strategies. There is, however, no research evidence that the PQR, as a process, is a valid and reliable tool for educational program evaluation.

Using an evaluative research model, the goal and process components of PQR were compared with their research-supported counterparts to determine if the PQR is, in fact, a bona fide process for program evaluation. Once established as a process for educational program evaluation, the procedures of the PQR process were compared with program evaluation procedures deemed to be valid and reliable in the literature. The results of this first investigation indicated that although the PQR establishes itself as a process for program evaluation, it is, in fact, an invalid and unreliable process for program evaluation.

A second independent investigation was conducted using a descriptive research model to determine the significance of the validity and reliability study. Responding through a survey, the vast majority of principal-respondents indicated that although their school sites were implementing the improvement strategies attributed to the PQR process and listed in their PQR Improvement Plan, the action plan was either based only partially on the results of the PQR self study or that the PQR self study was designed in such a way as to provide the proof necessary to legitimize the site's preconceived notions and plans.

Benjamin J. Maddox and
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Undergraduate Student Presenters

Fresno's Movie Theaters: An Economic Analysis

Edwards Stadium 21 Cinema appears to be the theater of choice for many moviegoers in and around Fresno, California. The theater offers a unique experience that has captured the preferences of a substantial share of the movie market. Since the theater opened, five other Fresno movie theaters have been driven out of business. We conducted a research study on Fresno's movie theaters to determine why Edwards is so dominant in the Fresno area. We were interested in various factors that influence individual decisions to attend a given theater. The factors we analyzed included location, positive externalities from nearby places to shop and eat, price, movie selection, and theater quality.

The majority of the data used in the analysis of Fresno's movie theaters was collected on the campus of California State University, Fresno. Approximately 150 students from various disciplines within the university were surveyed. The survey was designed based on the assumption that Edwards Stadium 21 is the dominant theater in and around Fresno. The survey itself consisted of a series of 13 questions. The questions were designed to gather demographic information, to determine the influence of surrounding attractions in individual choices to attend Edwards, what the students believe makes a superior movie theater, the strength of the students' preferences for Edwards, and how these preferences are affected by changes in the price of movies at Edwards, and other theaters.

Empirical results reveled that, for most students at California State University, Fresno, Edwards has become the movie theater of choice. After aggregating the data from all zip codes in and around Fresno, we found that 77 percent of the people surveyed preferred Edwards over any other theater in Fresno. Superior location, surrounding attractions, and ambience have enabled Edwards to capture a substantial share of Fresno's movie market.

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Statewide IPM Project, Kearney Agricultural Center,
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Potential For Using *Allium* Spp. Amendments, With And Without Soil Heating, or Weed Control Via Biofumigation

With the soil fumigant methyl bromide scheduled to be phased out of production in the United States by 2005, there is an urgent need for alternative methods of soil disinfestation. Crucifers, when used as green manures or combined with heat, have demonstrated suppressive activity on various soil pests. Previous studies using soil amended with onion (*Allium cepa*) and garlic (*Allium sativum*) extracts or residues have displayed a range of deleterious, inhibitory, or stimulatory effects on certain fungal and nematode pathogens. Laboratory research described in this presentation showed small to moderate reductions in viability of barnyardgrass (*Echinochloa crus-galli*), London rocket (*Sisymbrium irio*), and annual sowthistle (*Sonchus oleraceus*) when exposed to onion and garlic residues incorporated in soil in microcosms at concentrations of 1 or 3% at ambient temperatures (23 C). This deleterious effect on seed viability was considerably magnified when the amended soil was exposed to sublethal heat (39 C). In the search for useful alternatives to soil fumigation, there appears to be good potential for weed control using *Allium* amendments, particularly when coupled with soil heating. Further work is currently underway.

Chris McClean
California State University, Fresno
Craig School of Business Honors Program
Undergraduate Student Presenter

Effective Internet Advertising Through Website Characteristics

As the Internet becomes more widely used, the understanding of how it can be used as a marketing tool is becoming increasingly important. Most advertisers currently do not have the knowledge necessary to effectively integrate the Internet into their marketing plan. My study will cover an important step in developing this knowledge, which is to better understand characteristics of websites on which advertising is most effective. My study will consist of three scenarios, which take the subjects through a series of three websites. As they browse through these pages, they are asked to rate each site by characteristics from three categories of website effectiveness: Organized, Informative, and Entertaining (Chen, 1999). After going through their scenarios, the subjects will answer a series of questions to determine whether they meet the typical characteristics of online buyers (Bellman, 1999). Finally, the subjects will be given a list of online advertisers and be asked to circle the ones for which they can recall seeing a banner on the three websites they have just rated. With this data, I will be able to analyze several different factors of Internet advertising and consumer perception. Most importantly, I will look for a correlation between specific banner recalls, and the characteristics that the subject judged highly on the corresponding website. For example, do the subjects recall the banner ads better from sites that they thought were informative, exciting, well-organized, etc.? Also, I will be able to study whether or not the subjects demonstrate a better recall rate from sites that they scored highly all-around. Lastly, I can analyze the degree to which these answers differ, based on whether the subject displays typical characteristics of online buyers. With this information, online advertisers can focus their marketing strategy more effectively, concentrating mostly on visitors who are likely to make online purchases.

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Cancer Risk in Vegetarian Populations: A Meta-Analysis

Vegetarian populations have existed since antiquity and there are Biblical admonitions regarding the consumption of flesh foods. However, only in the twentieth century has it become possible to systematically evaluate the relationship between a vegetarian lifestyle and cancer mortality/morbidity on a population basis.

The literature on the cancer experience of vegetarians was surveyed and a total of twelve different vegetarian populations have been identified for inclusion in this analysis, the oldest being the membership of the Vegetarian Society of Manchester (founded in 1847). Most of the cancer experiences of these populations have been reported in the epidemiologic literature as Standardized Mortality (or Morbidity) Ratios or SMRs in which the numbers of observed deaths from cancer in the vegetarians was compared to an expected number of deaths. The expected numbers were generated by assuming the vegetarians experienced the same cancer mortality rates as the general population after taking into account age, sex and calendar year of follow-up.

In the current analysis, "pooled SMR" have been calculated by combining all twelve of the individual populations and using an inverse variance approach in which the precision of the individual studies is used as a weight. This results in greater weight being accorded to those studies based on larger, rather than smaller sample sizes.

For both sexes and all cancer sites combined the SMR_{pooled} was 0.75 (95% C.I.=. 72-. 78). However, the apparent protective effect was stronger in males (SMR_{pooled} =0.61) than females (SMR_{pooled} =0.82). On a cancer site specific basis, the strongest reductions in cancer risk were noted for lung/bronchus cancer (SMR_{pooled}=0.29) and mouth/pharynx cancer (SMR_{pooled} = 0.22). However, for some types of cancer there was not as pronounced a decrease in cancer risk in association with the vegetarian lifestyle (e.g. SMR_{pooled} for leukemia/lymphoma = 0.98 and for prostate cancer the SMR_{pooled} =1.00).

It is difficult to determine if the reduction in risk experienced by vegetarians was associated with the dietary habits of vegetarians or with other aspects of the vegetarian lifestyle (e.g. avoidance of tobacco and alcohol). Those studies that adjusted for other lifestyle factors also reported deficits in cancer morbidity/mortality suggesting that it is the dietary habits of the populations which explain the decrease cancer risk.

Daniel R. Model, MSW, MA
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Aliant University, Fresno
Doctoral Student Presenter

Client Satisfaction: Building a More Sensitive Scale

At present, few client satisfaction scales measure the multiple components of the therapeutic process, such as cost of services and treatment outcome (Nguyen, Attkisson, & Stegner, 1983; Greenfield, 1983; Ankuta & Abeles, 1993.) Furthermore, those that do, fail to give added weight to those areas of satisfaction most important to clients based on ethnic affiliation (Love, Caid, & Davis, 1979; Nguyen, et al, 1983; Reid & Gundlach, 1983.) It was proposed that creating a satisfaction scale covering diverse aspects of the therapeutic process experienced by students at a university counseling center and weighting the results based on ethnicity would result in a more accurate measure of client satisfaction with increased sensitivity to ethnic differences.

Participants were students of Hispanic, Asian, or European descent who underwent counseling services during the 1999-2000 academic year at the Psychological Services Center at a major California university. Students completed the Counseling Services Assessment Form (CSAF), a satisfaction survey patterned after the Client Satisfaction Questionnaire-8 (CSQ-8).

A regression analysis determined that for European-Americans and Hispanics, the only component of the counseling process that was significant in gauging their overall satisfaction with services was the relationship with their therapist. However, Asian-Americans were influenced both by their interaction with secretaries as well as their connection to their counselors. Once the results were transformed into weightings, and unweighted and weighted measures of client satisfaction compared, it was determined weighting results did not result in a more accurate measure of clients' level of satisfaction with counseling.

While weighting results did not result in a more culturally sensitive measure of client satisfaction, it is noteworthy Asian-Americans valued a component of client satisfaction European-Americans and Hispanics did not. This suggests measuring client satisfaction of Asian-Americans would be incomplete without including questions related to their experiences interacting with support staff.

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Web-Based Production/Operations Management Experiential Learning

Higher education institutions are placing an ever-increasing emphasis on the use of Internet as an instructional platform. To keep pace with the evolving information technology, over the past five years, the author has adopted a parallel approach of retaining the useful aspects of the traditional Production/Operations Management (POM) course while employing various Internet features.

Prior to the year 2000, a computer simulation game had allowed about 250 students from multiple sections of the POM core course at CSUF to experience the challenges of being a production manager. A computer mainframe ran this game. During 1999, however, Y2K planning issues placed a burden on the University,s Information Technology Services (ITS) that housed this simulation game. System administrators claimed to have neither the time nor the resources to revise this old, mainframe-based game for the new millennium. Consequently, this provided an impetus for the author to develop and implement a totally new web-based simulation game.

The new simulation game has significantly increased the course quality and enhanced teaching effectiveness. The POM students and faculty are the primary beneficiaries of this improvement. Their reactions have been quite positive. They are especially pleased with the 24-hour accessibility of the web site, its real-time communication capabilities, and effectiveness of the game's experiential learning process. This endeavor has also considerably reduced the use of University's scarce resources. Since every aspect of this game is on the web, it requires no intervention by ITS. For instance, unlike the old game, there is no need for an ITS personnel to monitor the game throughout a semester, another individual to print outputs, and yet someone else to burst the printouts and deliver them to the students. Accordingly, the use of Internet as an instructional platform proved to be an effective means of administering the POM simulation game.

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School Social System Characteristics Within High School Settings Of Different Size and Teachers' Perception of Student Violence and Disruption

The incidence of school violence has shown a recent measurable decline in some areas and held constant in others despite dire predictions of increasing episodes of violence within school settings. Efforts to thwart student violence continues by instituting practices, such as requiring school uniforms, developing additional security measures, enacting zero tolerance disciplinary policies, and breaking up large school bureaucracies into smaller units (consolidation). Some of these measures have brought about an appeasement of concerned and frightened communities but without the attendant significant declines in the behavior it is intended to effect. It is the position of this study that focusing upon violence and indiscipline at school is misdirected in that it concentrates upon symptoms rather than causative characteristics that are at the root of why violent acts occur at school. .

Research on school size has brought about a host of consolidation efforts that attempt to create schools within schools with the accompanying belief that smaller schools enhance student participation and social integration, create more opportunities for teacher-student contact, bring about less bureaucratic obfuscation, and create an optimum milieu of civility. More recent evidence points to a non-significant relationship between school size and violence. It was the intent of this study to identify school social system characteristics, through a measure of school climate, within High School settings of different size, that differentially contribute to the occurrence of school disruption and violence.

This Doctoral Dissertation study examines the social system factors (structural domains) of teaching-learning, authority-power, adult peer-group, adult-student relations, and disruptive school climate that effect behavior while students are at school.

This study focuses upon the teachers' view of school climate as a reflection of the prevailing social system within high schools of different size. Teacher's perception of threat and the incidence of campus violence will be investigated as factors that contribute to that perception. Based upon the results of this study, policy implications for school violence and school consolidation will be suggested. Of critical focus will be how schools, regardless of size, can alter their social system makeup so as to create a school environment that reduces the possibility of teacher and student risk for violence, and builds social system mechanisms that enhance teachers' power, collegiality, and connections with students.

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Perceived Health Needs & Barriers to Health Services Utilization of Fresno Adolescents: An Exploratory Study

INTRODUCTION: Utilization of preventive health services by adolescents is only 8% in Fresno County. The risky behaviors associated with this age group makes utilization of health services very important. This study was designed to identify youth perceived health needs and perceived barriers to health services.

METHODOLOGY: In the Summer of 2000, five focus groups were conducted at sites where the teens would most likely meet the 200% of poverty level criteria - Boys & Girls Clubs, Sanctuary School and Youth Shelter. To ensure spontaneous communication, two teen students were the focus groups moderators. The moderators were trained how to conduct focus groups, develop and field-test a survey tool, with the final approval by authorities at the target sites. The survey tool focused on adolescents perception of health, reasons for provider visits, feelings about providers, where to get confidential medical care, and perceived barriers.

FINDINGS: Fifty eight adolescents (40% male & 60% female), ages between 12-18, attending schools in Fresno Unified, Clovis Unified, Central Unified, and Sanctuary school and shelter participated in the focus groups. Ethnicities represented were 64% Hispanic, 17% African-American, 12% Caucasian, and 5% Asian. Participants characterized a healthy person as someone who is physically fit, feels good about himself and has caring relatives and friends. The majority of teens perceived themselves as healthy individuals. They recognize unhealthy practices and regard peer pressure as the principal factor in making poor choices. Depression, not feeling real sick, long waits in the office, parents' reluctance to take them for a check-up, forgetfulness, unfriendly and disrespectful providers are the main barriers to health services utilization. They learn most about health and health related issues from the media, teachers, providers and hospitals. Most of them are aware of places to receive confidential care when needed.

CONCLUSION: This study documents the perceptions of low-income high risk adolescents, what they need and what barriers prevent them from accessing health care. The results will be used to design teen-friendly health services and outreach programs to better address those needs. The limitation of this study is that the results may not be generalized to youths of higher economic status.

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Austrian Decision-Making in July 1914

The outbreak of the First World War has been the most debated historiographical subject of twentieth century; the question of who or what caused the war has plagued generations of historians, who have all reached different conclusions on the subject. Currently, there seems to be a consensus that Germany was the most responsible Power involved in bringing about the war in the immediate crisis of July 1914. Yet the prevailing interpretation often plays down the role of Austria-Hungary in creating the crisis to begin with, emphasizing instead how Germany pushed her ally to precipitate a war. Put more succinctly, Habsburg statesmen have been perceived as mere puppets in the hands of puppet-masters in Berlin. This is simply not the case.

Throughout the month of July, Austrian diplomats pushed for a war against Serbia, regardless of the consequences-which they very well knew might be a general European war. They did this because of a general belief that was held by all important decision-makers in the Dual Monarchy: namely that the Empire was becoming increasingly decadent as time went by, and that if it did not somehow crush the Pan-Slavism in general, and Serbian nationalism in particular, Austria would become the new "Sick Man of Europe," taking the position Offoman Turkey had long held on the Continent.

This was the dominant factor in Austrian decision-making, and led Habsburg statesmen to push for war without heeding the possible complications it might have for Europe as a whole. After looking at Austrian decision-making in the summer of 1914, it thus becomes apparent that Austria deserves her share of blame in bringing about the Great War. For her diplomats continually worked to bring about a violent reckoning with Serbia, until a war finally did come, which subsequently became a general European War-the first in one hundred years.

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Molecular Analysis of Microbial Community Structure and Diversity in Fumigated Agricultural Soils

Concern over the destruction of the Earth's ozone has prompted a ban on the use of the broad-spectrum soil fumigant, methyl bromide. Currently four methyl bromide alternatives: propargyl bromide, methyl iodide, chloropicrin, and 1,3-dichloropropene are being tested for fumigant effectiveness. Our work here is to evaluate the efficacy of these fumigants using the soil microbial community as an indicator system. We are evaluating microbial community structure and diversity in two different soil types after fumigation. We predict the loss of both microbial abundance and diversity as a result of fumigant treatments. Soils were collected from six fumigated treatment plots in Watsonville and six fumigated replica plots from Oxnard, Ca. The soils were collected at one-week and four-week post fumigation with four replicas each. Total soil DNA extractions were used to isolate soil DNA and were subjected to PCR amplification using fungal and bacterial primers targeted to the 18S and 16S rDNA respectively. As a reference, plate culture using, Czapek-Dox agar with yeast extract and streptomycin was used to evaluate filamentous fungi colony morphology. Morphological averages were taken and compared to both the non-treated and methyl bromide treated soils. Our findings show that the non-treated soils, both at MBA and Oxnard, contained the greatest number of morphological types compared to methyl bromide alternatives; with methyl bromide treated soils having the least. Furthermore, the morphological types found vary with the fumigant used. Preliminary DNA analysis reflects the morphological findings, which suggest that there are higher quantities of DNA in the non-fumigated soils as opposed to the methyl bromide. This suggests fumigant treatments are effecting the microbial community and at least some of the effects are fumigant specific.

Stephanie Parmely
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Doctoral Student Presenter

A Grounded Theory of Becoming a Teen Parent Among Juvenile Hall Females: Implications for Public Policy

Although teen parenting has declined in the last five years, the issue continues to remain a significant matter of public policy concern. Studies indicate that teen parenting increases the risk for child abuse, child neglect, poor academic achievement, and dependence on government subsidies. It also correlates with children who are at increased risk for substance abuse, crime, as well as teen parenting; issues of concern for policy makers. Very few studies have been done using qualitative research to understand the experience of teen parenting. This researcher used a grounded theory methodology, interviewing nine adolescent female parents incarcerated at a local Juvenile Hall to understand their experience in becoming a teenage parent. Results indicate that incarcerated female parents come from environments where they have endured multiple risk factors including; detached or abusive mothers, absent or abusive fathers, sexual abuse, familial substance abuse, and early sexual activity with adult males ten years older. They deny conscious plans of planning their pregnancy, but admit to thoughts of parenting for a variety of reasons including; motivation to avoid drugs, alcohol, or gang activity, and to have something of their own, a challenge. Many parents said that their family encouraged them to keep their babies for reasons including; to replace terminated or miscarried pregnancies from other siblings, to teach responsibility, and because of beliefs against abortion. Some parents appeared detached from their babies, while others showed high attachment. Half of the babies were in foster care, while the remainder were temporarily in the custody of a family member. Most of the teens saw a positive future for them and their children with hopes of completing high school and getting a job.

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Effect of Composted-Biosolids on Fruit Quality and Trace Element Accumulation in Field-Grown Apricots

The environmental and food safety concerns related to biosolids applications to agricultural farmlands are under extensive investigation. Due to the food safety concerns, current policy is to utilize biosolids on turf, fiber crops, or on food crops for which the edible part unit would have minimal direct contact with the biosolids. Tree fruits, nuts, and vines would fulfill this criterion.

Research data on the use of biosolids on stone fruits were barely available. The Central Valley of California is the main stone fruit production area in the country. Studies on biosolids application in orchards are needed to determine their potential as an alternative nutrient source and due to their high carbon content, as a soil amendment to improve soil quality. However, concern has been raised regarding the potential for negative impacts on fruit quality due to nitrogen loading from long-term applications of biosolids.

We studied apricot trees (Patterson variety on Marianna rootstock) that received annual applications of composted biosolids since the orchard was initiated in 1994. The biosolids fully replaced synthetic fertilizer applications to the trees. The control treatment (1) received no Biosolids and treatments 2, 3, and 4 received the equivalent of 57, 170, and 340 kg N/ha (0.9 lbs./acre), respectively. Soil samples were taken yearly before and after the fall biosolids application. Leaf sampling was in May and October. Fruit and pit tissue were harvested during summer. All soil, leaf, fruit, and pit samples were analyzed for major ions (Ca, Mg, K, S, P) and minor ions (B, Na, Mn, Zn, Cu, Fe, Al, Co, Cr, Ni, Pb) using inductive couple plasma technique (ICP) at USDA laboratory. Total N was also measured for leaf samples. The soil and leaf ion data are not presented here.

Data are presented for fruits harvested in summer 1999 and 2000 with three harvest dates per season. Fruits were separated by overall color. These included: green, green-yellow, yellow, orange and dark-orange. Each group was counted and tested for quality parameters that included soluble solid content (SSC), brix, acidity, firmness and organic acid (ascorbic, citric, and malic) contents.

Marked differences in the mentioned fruit quality parameters were not detected. The biosolids did delay fruit maturity: the control trees reached maturity earlier than did trees receiving low, medium, or high biosolids application. These fruit quality and maturity data will be presented.

Adrienne Peek
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Graduate Student Presenter

T.S. Eliot and the Birth of Modernism

In December 1908 a fateful moment occurred in the history of modem poetry. Reading Arthur Symons' The Symbolist Movement in Literature, Thomas Stearns Eliot was introduced to the writings of Jules Laforgue. He soon purchased the complete works of Laforgue, and the impact on his own poetry was radical. He acquired an ironic attitude and a new subject matter and style. Within a year he reached a much higher level of achievement. The momentum lasted for three years, as Eliot continued in this first period of creative breakthrough to develop along new lines the resources he had discovered. In 1909 he wrote "Nocturne," "Humoresque," "Spleen," and "Conversation Galante," four poems that are similar in some ways to Laforgue's; only the last was retained in his Collected Poems. In 1910 and 1911 came "Portrait of a Lady," "Rhapsody on a Windy Night," and "The Love Song of J. Alfred Prufrock." These poems effected a total departure from the Victorian and Genteel tradition of English and American poetry; in fact, no other poet in England or the United States had written anything so arrestingly "modern." They were the finest poems written in the twentieth century up to that point by an American. These facts are the more remarkable when we remind ourselves that Eliot was only twenty-three in 1911 and that he had matured his talent in an independence hardly less than that of Robinson in Gardiner, Maine, or Robert Frost on his chicken farm. No one in his milieu could have suggested to Eliot this way of writing.

Aubrey Penland,
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Undergraduate Student Presenter

The Influence of Group Norms on Individual Health-Related Behavior

Pate, Trost, Levin, and Dowda (2000) found participation in sports influential in health promoting behaviors of high-school students and suggested that group norms may play a role in this relationship. The present study examined the relationship between norms and healthy behavior, risk taking, and academic achievement, at varying levels of involvement among three groups: athletes, Greeks (sorority and fraternity members), and religious groups. A self-report survey with items measuring health, risk, and academic behavior was administered to 194 college students. The principal hypothesis was that athletes would have high health behaviors and norms, and that Greeks would have high-risk behaviors and norms. As predicted, results of the between subjects analysis of variance indicated that athletics were associated with healthy behavior, and Greek membership with risky behavior. Further, the results of the between subjects analysis of variance partially supported the secondary hypothesis that the more time individuals spend in a group, the more they will identify with and adhere to the group norms. These data suggest that the influence of social groups on personal behavior may be positive or negative, depending upon the nature of the group and the amount of time invested.

Rhette Piazza
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Undergraduate Student Presenter

Gender Stereotypes Adolescent Males Ages 12 to 13

This study describes the attitudes and unmasks the stereotypes held by 6 adolescent 12 to 13 year-old boys regarding female gender appropriate work roles, roles in the home, as well as their attitudes regarding gender while engaged in peer interaction. The main goal of this research is to examine some of the predominant stereotypes held by boys in this age group. This study compares the boys' home life and sibling characteristics to their attitudes regarding females. Additionally, this project illustrates how peer interaction effects the way they discuss topics on the female gender. This study contains two parts. First, a face-to-face interview with each participant; the goal of the interview was to explore their perception regarding the female gender. Additionally, this instrument provides information regarding their concepts of socially appropriate gender behavior while in homogenous or heterogeneous groups. Finally, the boys participated in a focus group designed to explore their thoughts on gender as they interacted in a peer group. In this study, these males disclosed many gender stereotypes. During the interview portion, many of the participants tried to articulate ideas about equality between the genders. However, with some probing, their ideas were revealed as hegemonic. They consistently applied rules that regulated women's behavior. They revealed four different fields men and women engage in: academics, work, socializing, and athletics. Boys, in their opinion, dominated the fields of athletics and work due to their superior strength. Girls, they accredited with superior standing in socializing and academics. While in homogenous groups they perform gender for each other based on the false information they have regarding boys and girls. Competition and popularity direct boys' conversations. Individual responses to question led me to believe that boys are beginning to think critically about gender roles. These boys wanted to talk about equality in terms of housework and jobs. However, when in groups pervasive stereotypes controls and obscures their behaviors.

Keri Pilgrim
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Undergraduate Student Presenter

San Joaquin River System Anadromous Fish Passage Literature Review

This research summarizes the habitat and conditions contributing to anadromous fish passage throughout the San Joaquin River system. Efforts were made to document historical and current migration conditions for chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead (*O. mykiss*) in major tributaries of the San Joaquin as well as in many of the ephemeral streams. Over 250 sources were reviewed and seventeen rivers and streams were addressed. Focus was placed on the identifying anadromous fish migration impediments. Habitat quality, water quality, and flow rates were reviewed. Restoration efforts planned for the individual rivers and creeks were also noted. This document was designed for use as a general reference, and in part as a guide indicating the ease and suitability of restoration on the streams of the San Joaquin River system. Much of the historically utilized habitat of anadromous fish have been altered by mining, diversions, and dams. Elevated water temperatures have negatively impacted portions of each of the rivers currently utilized by salmonids. Tributaries once utilized for migration now show sporadic regions of seasonal drying while some small creeks have become entirely ephemeral. As a result, changes have taken place in the population structure and race abundance of the chinook salmon and steelhead. Presently, the dominant run of chinook has reversed from a spring to a fall –run dominated system. It now appears that the winter –run is the sole remaining race of Central Valley steelhead found in the San Joaquin River system. As a result, the restoration of natural and self-sustaining populations of anadromous fish in the San Joaquin River system presents a significant challenge to valley ecologists.

Luiz Claudio Carneiro Monteiro Prazeres
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Undergraduate Student Presenter

The Death Poem: A Study On William Blake's Marriage of Heaven And Hell

William Blake, the most enigmatic and challenging of English Romantic poets, commonly seen either as a raving madman or deceptively naive poet, wrote visionary poems that defy common notions of reality. In the Marriage of Heaven and Hell, written around the same time as his largely accessible Songs of Innocence and of Experience, Blake calls our spirits or our imagination to rise above our ordinary ways of being in the world. Blake begins the Marriage of Heaven and Hell with a prophetic character named Rintrah "roaring and shaking his fires" in the wild. For the most part, Blake scholars see Rintrah as the personification of the poet's wrath "predicting the results of the era of revolution dawning in Europe and America". Though they correctly relate Rintrah's rage to these historical revolutions, they usually do not unearth its inner and subjective layers of meaning. For Blake, the wonder of those historical events was that they brought forth another type of revolution--that of the imagination. According to Blake, a creative imagination could fulfill our human potentialities and raise our beings to a truly human level of existence. Rintrah rages in the wild, foreseeing the new era of imagination. b. Close reading of the text that results in an inquiry into the unity and relation between "The Argument" and the rest of the work. c. The Marriage of Heaven and Hell closes with the apocalyptic "Song of Liberty". Here, Rintrah finally releases his fiery rain upon the earth, making available his transformative and imaginative powers. Throughout the MHH, Rintrah roars and shakes his fires in a wild and ecstatic dance, meaning to transport us out of the "ordinary life lived in an ordinary way". d. The MHH invites its readers to break free from the deadening restrictions of dualistic thinking.

Melissa Price
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Craig School of Business Honors Program
Undergraduate Student Presenter

Quality of Earnings: A Test of the Naive Investor Theory

The quality of a company's earnings is a relevant topic of discussion, considering the affect of earnings on future cash flows. Even so, there seems to be a group of investors who continue to fixate on the amount of earnings rather than considering the quality of earnings. The objective of this study was to test the naïve investor theory by comparing survey responses of sophisticated investors to survey responses of naïve investors. In addition, responses from sub-groups within the naïve group were compared to see if students at the Sid Craig School of Business became less naïve as they completed their course work. Earnings can be subdivided into two parts, a cash component and an accrual component. Research has shown a positive association between the cash component and future returns on common stock. Thus, the cash component is more desirable. Research documents a negative association between the accrual component and future returns on common stock. The naïve investor theory states that certain investors either do not know or ignore this information and fixate on overall earnings instead of considering separately the effects of cash and accrual components. The survey in this study was designed to test whether participants recognized quality of earnings issues. Preliminary results support the naïve investor theory. The sophisticated group's mean responses are different from the naïve group's mean responses and in the direction that was predicted. It also seems that students at the business school become less naïve as they advance through their course work.

Tiffany M. Rice, Christine B. Edmondson, Ph.D.
California State University, Fresno
Department of Psychology
Graduate Student Presenter

Anger Attacks in Anxiety Screening Participants

This study examined the relationship between anger and anxiety in a self-selected sample of college students participating in an anxiety disorders awareness event. Participants in the study were students and staff of California State University, Fresno along with community members screened during College Anxiety Screening Day. Anxious symptoms were measured by the National Anxiety Disorders Screening Project Mini International Neuropsychiatric Interview (MINI). Anger symptoms were measured by the Anger Attacks Questionnaire and the Trait Anger Expression Inventory. It was hypothesized that very likely to be anxious participants would have higher levels of anger than the likely or unlikely to be anxious participants and that the experience and expression of anger would differ for these groups. The hypotheses were supported. Of the 29 unlikely to be anxious participants, 25 reported no anger attacks, while 4 reported presence of anger attacks and none reported problematic anger attacks. Of the 13 likely to be anxious participants, six reported no anger attacks, 7 reported presence of anger attacks, and none reported presence of problematic anger attacks. Of the 12 very likely to be anxious participants, 5 reported no anger attacks, while 7 reported presence of anger attacks, and none reported problematic anger attacks. A Pearson Chi-Square analysis measured significant differences between the anxiety groups in terms of the prevalence of anger attacks. Significant differences were also found for angry behavior and anger attack physiology. One-way Analysis of Variance also indicated significant differences in the experience and expression of anger, in terms of Angry Temperament, Angry Reaction, anger-in, anger-out, and anger-control. This study has implications for the treatment and diagnosis of people diagnosed with anxiety disorders who suffer from anger problems.

Paulette Ginier, M.D., F.A.C.P.
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VA-Central California Health Care System

Telemedicine's Role In Home Care

Geriatrics and Extended Care Service at the VA Central California Health Care System (VA CCHCS) began in April of 2000 with an innovative project to add telemedicine technology to our existing Home Based Primary Care (HBPC) program. We utilized grant monies to purchase a telemedicine system that has the capacity to serve 13 homebound patients in remote areas. Our project was designed to offer HBPC services to previously underserved veterans. These patients have chronic health care needs and mental health needs, and live beyond the 30-mile boundary of our HBPC program. The project provided an opportunity to compare costs and sentinel events between the HBPC patients with telemedicine units and those without the units. We plan to demonstrate the efficiency and effectiveness of this new technology. Eleven telemedicine patients were categorized by age, diagnosis and distance from the hospital. They were matched with eleven HBPC patients with the same demographic profile, but who lived closer to VA resources. We measured the number of sentinel events (falls, admissions to acute care, unscheduled clinic or ER visits) occurring from April 2000 through January 2001 and nursing care costs associated with home care during that time. We also evaluated patient satisfaction among those who had the units to determine how they felt about the equipment, convenience, and quality of care. Of all the sentinel events that occurred among HBPC patients during that time, non-telemedicine patients sustained 89% of the falls and 75% of the acute care admissions. The cost of nursing time for a telemedicine visit was 36.5% lower than the cost of the nurse's time for an actual home visit; however, we have not amortized the costs of the equipment yet. The equipment has proven to be worthwhile investment in preventing complications, reinforcing teaching, evaluating care and increasing patient satisfaction.

Stephen D. Roberts, Ph.D.
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Valley Children's Hospital

Development of a Family-Centered Care Survey Instrument

While family-centered care has become a standard in health care for children and their families, to date no reliable or valid questionnaires or surveys exist to measure how oriented an institution is toward family-centered care. This study was designed to: (1) develop a Pediatric Family-Centered Care Survey Instrument that could be used to evaluate the status of family-centered care principles in pediatric health care facilities across the country and (2) assess the content validity of the survey instrument.

The Pediatric/Family-Centered Care Survey Instrument was designed to consist of two sections: Part A, customer-satisfaction and Part B, leadership/administrative section. To assess content validity, parents of 10 inpatients and 10 children treated in an ambulatory clinic and 11 healthcare providers and administrators employed at a hospital were asked to rate each survey item on Part A for content clarity (i.e. understanding and readability). Five representatives from the hospital's leadership evaluated each item of Section B for content clarity. Each item was scored as "yes" or "no" for clarity. For those items scored as "no," suggestions were elicited.

The results revealed that 92% on Section A of the Survey Instrument met the "greater than or equal to 80%" content clarity criteria. The finding on Section B of the Survey Instrument indicated that 78%met the greater than or equal to 80% content clarity criteria. The Instrument was then edited to reflect the changes recommended and forwarded to 17 nationally renowned experts in the field of Family-Centered care as part of a nation-wide content validity study. The experts were asked to evaluate each survey item in Sections A and B for content relevance, content clarity and category appropriateness. Each item was scored as "yes" or "no". In addition, for the items scored as "no," suggestions were elicited. The experts' results revealed that over 90% of the items on both Parts A and B of the Survey Instrument met the "greater than or equal to 80%" content relevance criteria; 60% on Section A and 92 % on Section B met the "greater than or equal to 80%" content clarity criteria; and finally, 85% on Section A and 92% on Section B met the "greater than or equal to 80%" category appropriateness criteria.

The Pediatric/Family-Centered Care Survey Instrument was again edited to reflect the changes recommended by results of this study. Section A was edited to include 70 items; whereas, Section B was edited to comprise 32 items. The survey was then forwarded to 30 members of the Family Advisory Board at Valley Children's Hospital and Exceptional Parents Unlimited to assess both content relevance and content clarity. Preliminary results indicate all surveys met the "80% or better" criteria for relevance and clarity.

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A Survey of College Students' Weight Loss Methods

Introduction: The purpose of this study was to determine what weight loss methods college students studying nutrition are currently using. Because of the explosion of poorly regulated claims and advertisements of herbal weight loss supplements the authors were interested in determining 1) what is the prevalence of supplement use in a sample of college students, 2) what other methods are being used, and 3) to what degree does the scientific literature support the claims of the marketing literature.

Methods: An instrument was developed via pilot study with an undergraduate sample. After revision, the survey was administered to two convenience samples at California State University, Los Angeles n = 64 (one undergraduate and one graduate course relating to nutrition). Age ranged from 22 to 38 years (average age of 27.3) with the majority of responders being Caucasian, Asian or Hispanic (33%, 31% and 19%, respectively) and the vast majority being female (91%).

Results: Forty-two percent of those surveyed were interested in weight loss; most having attempted one or two times during the past year, others having attempted up to five times. Subjects reported that they were an average 14.4 pounds overweight and reported wanting to lose an average of 13.7 pounds. The subjects reported using the following exercise methods: bike/walk/run/jog = 54%, aerobics = 7%, treadmill = 11% and other = 28%. Eighty percent belonged to a gym and reported using a wide variety of equipment. Twenty percent reported dieting. Only one subject reported using an herbal supplement. Of those reporting results from some method, 67% reported weight loss and 33% more energy. Subjects reported getting information mostly from friends, family, magazines and school. Although 60% reported having a primary care physician, no one reported asking their physician about weight loss.

Conclusions: Nutritional science students in this study who were interested in weight loss generally are not using herbal supplements. They appear to be engaging in healthy weight loss methods such as exercise and diet control. Students in non-nutrition classes will be included in future surveys. After reviewing the scientific literature on herbal methods there seems to be little support for the effectiveness and safety of these poorly controlled dietary supplements relative to their booming market sales.

Ray Michael Sanchez
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Department of History
Graduate Student Presenter

The Apostle Paul

The life and letters of the apostle Paul provide a glimpse into first century Judaism, the birth and spread of early Christianity, and the hopes, fears, tribulations, and theology of the controversial Jew who loved the Gentiles. His story is nothing less than a conundrum: born in Tarsus and educated in Jerusalem; of the tribe of Benjamin and a Roman citizen; tent-maker and evangelist; Pharisee and Christian; Jewish scholar and yet the most prolific writer in the New Testament. Paul's epistles, more than any other biblical composition, have been scrutinized, revered, the agent of conversion for many great and influential men (Augustine), and the instigation of worldwide religious reformation (Luther). Conversely, as is often the case with influential works, they are the cause of multitudinous misunderstandings as his co-apostle Peter would attest (2 Peter 3:15,16).

The portrait of a young zealous Jew, anxious to eradicate anything opposed to the God of Israel, who finds in Jesus of Galilee the promised savior of both the Jews and Gentiles, is clear from the New Testament evidence. This seemingly ambiguous figure-who did not even know Christ first hand, and in fact killed his fellow Jews who claimed that Jesus was the Messiah~hanged the course of history by preaching justification by faith in Christ and hence, defining early Christianity. The apostle Paul inundated the Mediterranean world with the Christian faith-the beginning of the end for paganism while just the beginning of what we now call church history. His ecclesiastical, evangelistic, and theological legacy survives even until today.

This paper will examine the center of Paul's thought, i.e., the core of Paul's conception of Christianity, through the intensely personal writings of a man of letters. In the Pauline Corpus we find rich doctrinal and practical instruction that illuminates Paul's central emphasis: salvation by the grace of God on the basis of the redemption of Jesus Christ. Thus it will be shown that Paul, through his life and written word, was appointed to teach the full doctrine of gentile freedom, whether by his own discovery or divine revelation, rather than an exclusively Jewish religion. Paul more that any other man in history was responsible for the movement of Christianity from being a Jewish sect to a world religion.

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Identification of the Principle Target of Inhibition by a Potent Polypeptide Anticoagulant Present in *Haemadipsayanyiianesis,* the Chinese Leech

Cascade activation of blood coagulation factors by either of 2 separate routes amplifies the signal for clotting. When blood contacts abnormal surfaces the intrinsic pathway is triggered. Factors released ~om injured tissues initiate the extrinsic pathway. Both converge at factor Xa, the enzymatic factor at the start of the common pathway eventually leading to clot formation through the catalyzed conversion of fibrinogen to fibrin by prothrombin.

A polypeptide designated CYYSO by the Hitachi Chemical Research Center, isolated from leeches and cloned into a yeast expression vector under galactose promoter control has previously been reported, We purified and tested the polypeptide product. CYY5O is a potent inhibitor of human factor Xa (Ki 5 tiM), bovine factor Xa (Ki 3 nM), trypsin (Ki 2 nM) and chymotrypsin (Ki 12 nM) but not of thrombin, elastin or Cathepsin G.

Furthermore it's relative inhibitory activity as measured by clot formation in the activated partial thromboplastin~ time (APTT) a test for screening factors in the intrinsic pathway, is I OOX greater than that for the prothrombin time ~T), a test for factors in the extrinsic pathway. This was a surprising finding at the time since prior to these experiments factor Xa was believed to be CYYSO's principle target.

Another target of inhibition was hypothesized to exist to account for the aforementioned results. That factor has been identified as factor IXa (Ki *0.56* tiM), the factor in the intrinsic pathway which activates factor Xa. Factors Ma and Xlla of the intrinsic pathway were found to be lesser targets of inhibition (Ki's of 30 and 18 tiM respectively). Xallikrein, also found in the intrinsic pathway, was not inhibited.

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"Mindless" Decision Making as a Failure of Contextual Reasoning

Decisions are often made without reference to vital information, even under conditions in which such information is readily available. Several traditions of research suggest that this may derive from failure to have pertinent information immediately available in the decision context. The present research addressed this possibility. Respondents rated the utility of real-world decisions either in the presence or absence of simple pertinent information. The information provided required no training, was relatively obvious, and was already known to the respondents (e.g., the fact that if money is spent on a given item, that money will not be available for other expenditures). Presentation of such information in the immediate context of decisions significantly improved respondents' abilities to understand their negative consequences. These results indicate that the presentation of pertinent information in immediate decision contexts, even information which is already available in respondents' long term memory, can improve the understanding of decision situations and reduce "mindlessness" in decision making. Also, and of importance for real-world decision making, such information is relatively useless if not activated in working memory during the course of a decision process.

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The Incidence And Treatment Of Prehospital Motion Sickness

OBJECTIVES: Our objectives were: 1)To determine the incidence of motion sickness during ambulance transport on a mountainous route in healthy volunteers, and 2)to determine if droperidol alleviated the signs and symptoms of motion sickness in those volunteers who developed it.

METHODS: This was a prospective, randomized, double-blinded, placebo controlled trial. Subjects were healthy volunteers who were over 18 and not currently taking an antiemetic. Participants were transported in the back of an ambulance over a mountainous road. Those who developed motion sickness rated their nausea on a 100mm visual analog scale (VAS) and were randomized to receive IV placebo (saline) or droperidol (2.5mg). Symptoms were recorded on a VAS every 5 minutes until the end of the transport. Incidence of motion sickness was calculated as a percentage with 95% confidence intervals. Pretreatment characteristics were compared with chi-square tests, and mean VAS were compared using T-tests.

RESULTS: 37 subjects completed the study. Sixteen (43%, 95% CI 27% to 59%) developed motion sickness. 15 were randomized and completed data collection. 8 received droperidol (mean baseline VAS-45) and 7 received placebo (mean baseline VAS-40). Droperidol trended toward a greater mean reduction of nausea than placebo at 5 minutes (20 versus 4, p=0.077).

CONCLUSIONS: The incidence of motion sickness during ambulance transport in a mountainous setting is substantial. There was a strong trend toward a positive treatment effect with droperidol. Further prospective study in an actual patient setting is warranted.

Bonnie Tomasovich
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Graduate Student Presenter

Mexican-American Interaction Patterns in Mainstream American Classrooms: A Study Of Teacher Awareness

Mexican-American students who are educated in mainstream American schools continue to fail in disproportionate numbers. That this failure occurs even when these students gain in English proficiency suggests a need to identify other contributing factors. The language a child speaks is part of a larger cultural heritage and identity that has been implicitly learned from the moment of birth. From parents, family members, and the community to which they belong, children learn ways of communicating and interacting that express the values and beliefs of that culture. The school community is itself a culture with a language of its own. Inherent in the language of the classroom are the values and beliefs of the school community. There are established patterns of communicating and interacting in which children are expected to participate.

This study investigated teachers' awareness concerning differences in the ways Mexican-American children interact and use language in their homes and the ways they are expected to interact and use language in mainstream American classrooms. Fifty-two teachers, kindergarten through fifth grade, participated in the study, which was conducted in two phases: a three-part questionnaire and follow-up interviews.

Data analyses indicated that discontinuity does exist for Mexican-American students between classroom interactions and interactions commonly experienced in their homes. Data analyses also indicated that Mexican-American teachers in this study were more knowledgeable about interactions and used information about interactions more than Caucasian teachers. Neither extensive experience nor additional training regarding English learners increased teacher awareness concerning differences in interaction patterns. This lack of awareness contributed to miscommunication between teachers and students and often resulted in teachers' misinterpretation of assessments for Mexican-American English learners. Unaware of these differences, Caucasian teachers reported that they assumed students had difficulties because of a lack of English proficiency or that they were academically challenged by the task.

Angela Toste, Brian Tsukimura
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Graduate Student Presenter

Reproductive Characteristics of the Chinese Mitten Crab, *Eriocheir sinensis*

The Chinese mitten crab, *Eriocheir sinensis*, is an invasive species that threatens the Central Valley agricultural water supplies. The crab's population has exponentially grown and invaded the San Joaquin Delta. The mitten crabs threaten the Delta's endangered fish because they clog fish recovery screens, injuring and killing many endangered fish by impalement on their spines, thus decreasing water delivery to agriculture. Our focus is to determine their reproductive characteristics. We investigated the reproductive cycle through examination of ovarian weight. Ovary weights were found to have doubled from September to October, then remained constant through February. In addition, body weight and ovary weights were measured to determine the gonadosomatic index (GSI = ovary / body weight). We also isolated and characterized the yolk protein, vitellin, which is the sole energy source used by developing embryos. To purify vitellin, crab ovaries were homogenized, centrifuged, and collected by salting out impurities. Electrophoresis and chromatography were used to determine the purity and characteristics of vitellin, which is composed of four subunits (144 kDa, 102 kDa, 88 kDa, and 79 kDa). Antibodies to vitellin were developed for assays, including an enzyme-linked immunosorbant assay (ELISA) and Western Blot. ELISA's, using a 1:14000 dilution and having a detection range of 1- 300 ng, were developed to measure hemolymph concentrations of yolk proteins. October crabs were found to possess high levels of yolk proteins indicating an advanced reproductive stage. Currently, November through February hemolymph samples are being investigated for their vitellin content. By altering or eliminating the vitellin protein, then egg development might be decreased and future problems with the mitten crab would cease.

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Linguistic Antecedents And Evolutionary Features Of New Mexican Spanish

This paper presents a comprehensive study of study of the linguistic antecedents and evolutionary features in the Spanish spoken by the Hispanic people in New Mexico. It includes Spanish language and linguistic elements traceable to the communication system of their sixteenth and seventeenth ancestors, and the influence of other languages and other linguistic phenomena in transforming and extending their communication system.

There were four principal objectives in this study. The first objective was to analyze and present the most distinctive variations of the oral Spanish version used by the Hispanic people in New Mexico compared to the prescribed version of the Spanish language. The second objective was to identify and present the evolutionary changes that occurred in the oral communication of this population in terms of linguistic elements within the language. The third objective was to describe the influence that other languages and dialects had in altering the overall vocabulary and linguistic features in the native language of this population. Finally, the fourth objective was to predict the survivability of the language in regards to future generations of New Mexican Hispanics.

The survey and review of pertinent literature on the subject was one of the principal approaches used to collect information in this study. Compared to prior studies I have conducted on this subject, this particular study included a comparative analysis of the New Mexican Spanish lexicon with the vocabulary used by Spanish speakers in sixteenth- and seventeenth-century Spain. This study also included a comparative analysis on the linguistic transformations that occurred within the New Mexican lexicon compared to the standard version, as well as additional vocabulary that evolved differently than in the standard version due to geographical factor and influences from other languages.

The results of the study show that the oral Spanish spoken by New Mexican Hispanics include many words that are traceable to early Spanish; however, they are comprehensible to speakers of the modern version. The findings also show that the evolutionary transformations that have occurred within the language are comprehensible to speakers of the modern version. However, the study shows that there are numerous hispanicized words from American English that non-English speaking Hispanics are unable to comprehend; and there are words that emerged from the Nahuatl language in Mexico that other Spanish speakers (except Mexicans) are unable to comprehend. Finally, the study shows that the remnants of early Spanish spoken by New Mexican Hispanics will probably not survive the twenty-first century, but some bilingual New Mexicans will speak the modern version.

Julie Vance
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Graduate Student Presenter

Intrastream Movements of the California Newt (Taricha torosa sierrae) in an Intermittent Central California Foothill Stream

During late winter and early spring, the California Newt (Taricha torosa) congregates in streams to breed. Very little is known about the ecology of Taricha torosa sierrae, a subspecies that is distributed throughout the western slope of the Sierra Nevada. During the 1998-1999 breeding seasons, T. t. sierrae were marked as individuals by tattoo, released, and resampled 3 times weekly to determine subsequent distribution and preferred habitat features. T. t. sierrae exhibited high site fidelity, but there were several individuals that moved extensive distances, particularly after storm events. Newt distribution was significantly correlated with increased stream depth and width, overhead cover, detrital and rootwad substrates, and pools. Long-term studies are needed to adequately study the ecology of this species, since the breeding season and breeding habitat are both brief and highly variable.

Hugo Vela
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Undergraduate Student Presenter

Roman Heroism In Virgil's *Aeneid* During The Augustan Age

In this study, I set out to identify the Roman concept of epic heroism as seen through Virgil's epic, the *Aeneid.* Heroism is exemplified by two professedly differing ideas of the *Aeneid*: firstly, by *pietas* (a Latin word meaning, "social duty and responsibility") and, secondly, by *furor* (a Latin word that may be simply rendered with "battle-fury"). I will explore the significance of the juxtaposition of these two Roman ideas in the *Aeneid*, and the implications this has on the concept of Roman greatness during the Augustan Age (approximately 43BC-18AD).

I have researched Virgil's interpretation of epic heroism through various sources. First, I examine the use and relationship of *pietas* and *furor* throughout the *Aeneid.* Second, I research various modern publications that discuss different interpretations of Virgilian heroism in the backdrop of the Homeric heroism in Greek Homeric epic (i.e. epic written by the legendary Greek writer, Homer), a genre by which Virgil was greatly influenced. Lastly, I explore the literary movement during the Augustan Age as seen in the literary works of this era.

Through this research, I have found that Virgil contributed much to the literature of Augustus' literary circle of writers. He expresses much of the same attitudes and hopes of these writers and exemplifies the Roman concept of greatness through Aeneas, the fictional hero of the *Aeneid.* Furthermore, I have found that Virgil utilizes and modifies the Homeric model of heroism as seen through Achilles, the archetypical Homeric hero, in order to create purely Roman hero.

Therefore, I conclude with this argument: that the two most resounding elements of the *Aeneid*, *pietas* and *furor*, must co-exist in the hero in order for him exemplify the idea of Roman greatness. In addition, there is a direct connection between the idea of heroism in Virgil's *Aeneid* and the elements that make up the Augustan Age, including the conduct of Caesar Augustus himself.

Robert D. Wells, Ph.D. and
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Valley Children's Hospital

Pediatric Ethics Case Based Research

This study was conducted to determine if hospital based Ethics Committees have similar values to the staff members of their facility. Using a monthly ethics case, members of the Ethics Committees of Valley Children's Hospital, Oakland Children's Hospital and Lucille Packard Children's Hospital and all employees of these facilities received a short case study involving an ethical dilemma. These cases were sent to all participants through the intranet e-mail service of each facility. A number of options were presented and participants were asked to read the case and select the option that best reflected their view of the best course of action. Cases included a range of topics from HIV exposed surgeons, adolescents refusal of life saving chemotherapy, sharing non-paternity information and medical futility. The results of the committee members' responses were compared with their individual constituencies. Two of the hospitals had no statistically significant differences between committee members and their hospital members. The third hospital demonstrated a significant difference on 3 of the 12 cases. Interestingly, these three cases were similar to actual cases presented to this committee and therefore may have impacted the committee in an individualistic fashion not found amongst the wider hospital community. For the total sample, the committee and hospital members agreed on 90% of the comparisons. Despite the difficult and complex issues involved in pediatric ethics and the relative subjective nature of making ethical decisions, hospital based ethics committees seem to reflect the hospital culture from which they derive.

Christopher L. Williams
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Undergraduate Student Presenter

Gender and Ethnic Differences in Referrals to School Psychologists

This study descriptively examined teacher's referrals to school psychologists in Kindergarten through eighth grade students (N=750) in a central California school district. Our objective was to understand if gender and ethnicity were related to teacher's referrals. We analyzed comprehensive data from the school district's 1999-2000 data- base. We hypothesized that; 1) there would be gender differences with regard to teacher referrals to school psychologists; and 2) there would be ethnic differences in teachers referrals to school psychologists (Caucasians versus Others) that were not proportional with the district's demographic characteristics. Hypothesis 1 was supported. There were gender differences in teacher referrals to school psychologists among Kindergarten through eighth grade students in this district. Specifically, teacher's referred males 80% of the time and females 20% of the time (N=203). It was found that among males referred (N=161), 80% were comprised of three main reasons: defiance (43%), disrespect (23%), and fighting (14%). Among females referred (N=42), 83% were comprised of 2 main reasons: disrespect (48%) and defiance (35%). Other reasons for referral included theft, profanity, obscenity, and sexual harassment, where males were found to make up 87% of these three areas combined (N=38). Hypothesis 2 was also supported. There were ethnic differences in teacher referrals to school psychologists in this district. The district is comprised of 50% Caucasian, 39% Hispanic, 7% Filipino, 4% Asian, and less than 1% Native American, Pacific Islander, and African American combined. Hispanics were found to make up 45% of the referrals, Caucasians 40%, all remaining ethnic groups combined for the remaining 15%. In addition to the previous two hypotheses aforementioned, it was also found that Gender differences occurred with the district's self-referral/walk-in policy. In this case, females were the prevalent group making up 87% of the self-referrals (N=219). The issue of whether or not the self-referral process is a viable method of intervention as well as any feasible implications of these findings will be further analyzed and discussed.

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Undergraduate Student Presenter

Inverted Duplication 15q25 (Tetrasomy 15) in an Eight Year Old Patient

Background: Tetrasomy 15 can result from an inverted duplication of chromosome 15q24-26. The clinical features include: hypoplastic fingers, hand and feet deformities, craniosynotosis and developmental delays (AM J Med Genet 2000, 93:393; AM J Med Genet 1998, 80:368). The purpose of this research was to identify a marker in an eight-year-old patient with pectus excavation, lateral scoliosis of the thoracic spine, some clumping of the feet, developmental delay (moderate to severe), hypoplastic fingers, and craniosynotosis.

Methods: Karyotypic and Fluorescent *in situ* Hybridization (FISH) were done on the young patient. Initial FISH analysis used P-SNRPN, a DNA probe indicator for Angleman/Prader-Willi. A whole chromosome paint (WCP15) for chromosome 15 was used to determine if the marker had been a distal portion of the q arm of the chromosome. A telomeric repetitive sequence probe was used to determine if there was a presence of a translocation.

Results: Karyotype of the patient and his parents show the marker to be *de novo* and was negative in G and Q banding. No C band was detected. The patient has a mosaic cell line; 95% of the cells carried the marker and 5% of the cells contained a normal karyotype. P-SNRPN was negative. WCP15 confirmed that the marker was from chromosome 15. The telomeric repetitive sequence probe showed a signal on each end of the marker chromosome. This indicated that the marker was an inverted duplication of chromosome 15 distal to the breakpoint 15q24.

Conclusion: The clinical and phenotypic features of this patient are consistent with that of other young patients with Tetrasomy 15q24-26. Based on the FISH, cytogenetic studies, clinical and phenotypic features, we concluded that the patient has a rare disorder: Inverted Duplication 15q25 (Tetrasomy 15).

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Lipoic Acid and Propofol: Effects on Skin Flaps

In recent years there has been considerable interest in the use of antioxidants for human health. This study was conducted to examine the effects of lipoic acid and propofol in a commonly used surgical procedure. These two agents have been reported to have antioxidant properties but have not been investigated in the type of surgical procedure described here. Subjects were anesthetized and underwent skin flap surgery. A 3 by12 centimeter, full-thickness skin flap was raised and reapproximated. Lipoic acid was given to two groups of subjects at 100 mg/kg. One group was given daily injections, the other was given one dose the day before surgery and one dose just before surgery. Anesthetics used were either ketamine/xylazine, pentobarbital, or propofol. The skin flaps were examined for survival at ten days post surgery and treatment groups were compared statistically. On subjects given the anesthetics ketamine/xylazine and pentobarbital, flap survival was about fifty percent of the original flap length. On those subjects given either of the two antioxidants, flap survival was increased 30 to 40 percent over the other two groups. These increases were statistically significant with a P value of less than 0.05. Free radicals produced in the body during the normal processes of healing may have detrimental affects upon certain tissues. Antioxidants that combat free radicals have been given much attention in their relation to human health. In this study we have shown that two different antioxidants can produce beneficial effects on healing. Both the commonly used anesthetic, propofol, and the powerful fat soluble antioxidant lipoic acid produced a dramatic increase in skin flap survival.

POSTER PRESENTATION ABSTRACTS

(IN NUMERICAL ORDER BY POSTER BOARD NUMBER)

Sergio Aguilar, Jed Davis,
Dean Neufeld, Tony Pixton,
Chue Vue, Scott Wenholz,
Parameswar Hari
California State University, Fresno
Undergraduate Student Presenters
Poster Board No. 1

Spin-Lattice Relaxation Time Measurements Using Hahn Echo Technique

In industry today, knowing the molecular make up of a material sample can have many important applications. The structure of a given molecule may be deduced by measuring how the molecule responds to various magnetic fields. Nuclear Magnetic Resonance (NMR) is a well-understood technique that employs magnetic pulses to extract information about the molecular structure of a material sample. When the sample is exposed to the magnetic pulses the constituent molecules are rotated by an angle that depends on the width of the pulses. Subsequently, the molecules begin to relax back towards their equilibrium position. Each distinct sample has two different characteristic relaxation times, denoted by T1 and T2. T1 is normally measured by a standard technique, which involves short time scales. We performed T1 measurements on a mineral oil sample, using the standard technique. The experimental results yielded a value for T1 of 3.74 milliseconds. The accepted value of T1 for our sample is 25 milliseconds. The T1 measurements using the standard technique resulted in approximately 85% error, due to the limitations of our NMR Spectrometer. In order to bypass these limitations, we modified the common technique for measuring T2 to find T1. By comparison, the adaptation of the T2 measurement yielded a value for T1 of 24.5 ± 0.5 milliseconds, which corresponds to an error of 2%.

Alejandra Alvarado,
Dr. Daniel Goldston
San Jose State University
Graduate Student Presenter
Poster Board No. 2

The Heilbronn Problem

Our research is on a well-known number theory problem known as the Heilbronn Problem. Consider placing n>2 points in a unit area (or other convex regions such as a unit square), so that no three points are in a straight line. Find the best arrangement of these points, such that at least one triangle can be formed, with the points as their vertices, with maximal area yet still smaller than the other possible triangles formed. For a unit square, exact solutions have been shown to exist for up to six points and lower bounds have been found for up to 15 points. For small values of n, the arrangements are best when placing the points on the vertices or along the edge of the square. As n increases, some of the points need to be placed in the interior of the square for a better arrangement. Our first step is to solve the discrete problem, on a lattice by examining all possibilities. We are writing several Mathematica programs to analyze and compare all possible arrangements of these points on a lattice in the unit square. Although a proof for this problem is very difficult, we can verify for values of n<15. The results found so far already give pretty close approximations to the know solutions for n=4, 5, and 6. We are refining the search process in order to find a numerical method to compute fairly accurate lower bounds, and investigating a possible algorithm for the lower bounds on the maximum minimum areas for larger values of n.

Tony Au, PhD, Patrick Seames,
Brian Griffin, Victor Leyva,
Tim O'Dea, Danny Solano
California State University, Fresno
Department of Industrial Technology
Undergraduate Student Presenters
Poster Board No. 3

The Design of an Automated Insertion Machine

The purpose of this study was to design a new low-end insertion machine for the Haeger Company of Oakdale, California. The design team researched four components of the Model 618 machine, which Haeger is currently producing: C-frame, parts of the frame, exterior coating, mechanical system, electrical system, and housing. The team contacted experts in these respective fields to gather design information.

Initial research involved gathering information regarding the structure of the C-frame. The team considered a cast-iron frame, a welded sheet metal frame, and a steel-plate frame as possible structures. The steel plate frame was selected for the C frame. The team investigated the lower tool holder, the upper cylinder holder, and the frame feet. The team recommended that the lower tool holder and upper cylinder holder be made out of cold rolled steel. The frame feet should be made out of hot-rolled steel. Midnight Black Wrinkle exterior coating, which has a wrinkled look capable of covering flaws on the outer surface of the steel-plate is recommended for the coating.

The team evaluated the air-over-oil hydraulic system and the hydraulic only system. The air-over-oil system was the recommended system because the output force of the unit can be regulated with a simple air-regulator valve. Two control systems were evaluated: a relay logic control system and a programmable logic control system (PLC). The General Electric PLC was selected as the PLC for the machine.

Two choices of housing material were evaluated: sheet metal and ABS plastic. The ABS plastic design was selected for the housing of the machine.

Eric Cotton and Karl Oswald, Ph.D.
California State University, Fresno
Department of Psychology
Undergraduate Student Presenter
Poster Board No. 4

Affirmative Action, Racism, and Multidimensional Prejudice

Affirmative action programs have been under considerable debate in recent years, and many questions have arisen about the nature of disagreement with such programs. Previous studies suggest that racial prejudice is the underlying factor related to opposition towards affirmative action (Jacobson, 1985). The current study investigated the relationship between affirmative action attitudes and a global measure of prejudice. Here, multidimensional prejudice includes four types of prejudice: racism, sexism, religionism, and heterosexism (Godfrey, Richman, & Withers, 2000). Thirty-one participants (22 minority and 9 non-minority participants) from the lower division psychology pool at California State University, Fresno were administered two questionnaires. One questionnaire, the M-GRISMS-M (Godfrey et al., 2000), measured multidimensional prejudice. The other questionnaire measured agreement with affirmative action. An alpha level of .05 was used for all statistical tests (one-tailed). Pearson's product-moment correlation coefficients were calculated for all correlational analyses. Results revealed no significant relationship between racism and affirmative action agreement, $r(30) = -.15$. Also, there was no relationship between multidimensional prejudice and affirmative action agreement, $r(30) = -.12$. Upon reviewing the previous research demonstrating a negative correlation between racism and affirmative action agreement, it was discovered that all participants were non-minority (Jacobson, 1985). Analysis of non-minority data revealed a significant negative correlation between affirmative action agreement and racism, $r(8) = -.66$. Results also revealed a significant negative correlation between affirmative action agreement and multidimensional prejudice, $r(8) = -.63$. These results suggest that agreement with affirmative action is negatively related to racism for non-minority individuals only. That is, as racism increases, agreement with affirmative action decreases. It is also concluded that agreement with affirmative action is negatively related to multidimensional prejudice, as measured by the subscales of racism, sexism, religionism, and heterosexism for non-minority individuals only.

Marco Diaz, MD,
Gregory Hendey, MD, and
Richard Winters, MD
UCSF-Fresno, University Medical Center
Poster Board No. 5

How Far Is That By Air?
The Derivation Of An Air:Ground Coefficient

OBJECTIVE: When a helicopter and an ambulance transport patients from the same location to the same hospital, the helicopter travels a shorter distance. But how much shorter is the distance? A simple equation that defines the relationship between air and ground miles would be useful to EMS personnel. Our objective was to derive a simple equation to convert distances between air and ground miles.

METHODS: We performed a retrospective analysis of a convenience sampling of 246 "Lights and Sirens" ground ambulance transports between 1993 and 1997. Ground distances were recorded from odometer miles for each transport. Air miles were calculated using the Global Positioning System (GPS), measuring the distance in a straight line from the scene to the hospital. Air and ground distances were correlated using regression analysis.

RESULTS: There was a strong linear correlation between ground miles and air miles at virtually all distances (R=0.932, R2=0.869). Regression analysis revealed the following relationship: Ground miles = 0.94 + 1.25 (air miles). We simplified this to the more useful approximation: Ground miles =1.3 (air miles). The approximation equation yields an answer within 1 mile of the regression equation up to a distance of 40 air miles.

CONCLUSION: Knowing a 911 caller's location by GPS, one may approximate the actual ground mileage to the hospital by multiplying the "straight line" or air distance by 1.3. This conversion coefficient may prove useful for EMS personnel in making transport decisions, research, or planning purposes.

Regina Y. Favors
San Diego State University
Undergraduate Student Presenter
Poster Board No. 6

The Politics of Urban School Reform: The Political Disparities in Secondary Education in Contemporary America

One of the basic problems with urban education policy is "churning" and the ineffectiveness of proposed initiatives. This research investigated the politics of urban school reform and discussed the imbalance of power. The purpose of this investigation was to illustrate and characterize the political disparities in secondary urban education. The data obtained for this research was subjected to an analysis of variance. This technique produced substantive findings showing independent-dependent relationships. The results of the study suggests that these findings are various and mixed. Although this research is preliminary, it will, nonetheless, explore the continual role of inequities in secondary education policy application.

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Poster Board No. 7

Test-taking Strategies Using Frequency of Occurrence Information

Consider a scenario in which a student must guess the correct answer on a multiple-choice test. One strategy a student might employ is to judge the frequency of correct answers on the exam and use the most frequent answer as the guess. Previous research on frequency of occurrence has demonstrated that frequency information is automatically processed (Hasher & Zacks, 1984) and is used to enhance learning (Underwood, 1969). This evidence is used here to test whether students use frequency of occurrence information of correct answers when taking multiple-choice tests. The current research question is: When taking a multiple-choice test do students encode the frequency of position of the correct answer? And if so, do they use this information when guessing the correct answer? Two experiments were conducted in an attempt to answer these questions, both using actual testing situations. Students were given four-alternative multiple-choice tests after studying eight literature passages. After each passage students were given four questions about each individual passage. Experiment 1 manipulated the position of the correct answer. Fifty-six undergraduates from California State University, Fresno participated for partial course credit. Approximately one-third of the correct answers occurred in position 'a,' one-sixth in position 'b,' one-sixth in 'c,' and one-third in 'd.' Results revealed significantly higher correct responses for positions 'a' and 'd' than positions 'b' and 'c.' In an attempt to reduce the guessing bias, Experiment 2 equated the position of the correct answer across all four positions. That is, the correct answer appeared equally often in all positions. Sixty undergraduates from California State University, Fresno participated for partial course credit. Results demonstrated equal correct responses across all four positions. Further analyses of incorrect answer position revealed differences across position, specifically, students guessed position 'a' significantly greater than positions 'b', 'c', or 'd.' No other differences occurred. These results suggest that students are perceptive to frequency of occurrence of position of the correct answer and employ this information when guessing answers. This frequency bias is reduced, but not eliminated by equating position frequency of correct answers. Lastly, when the frequency information is eliminated, students tend to use position 'a' (on a four-alternative multiple-choice test) when guessing. Future research is aimed at exploring this tendency.

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Poster Board No. 8

The Unprecedented Observation of Solid-State ^{63}Cu-NMR Signals for a Coordination Compound of Copper(I)

Copper(I) complexes of organic ligands are amongst the most ubiquitous (and most important) classes of coordination compounds. For example, these complexes occur naturally in the active sites of copper proteins or are used as catalysts for organic transformations. In this category, those complexes containing a ligand with one or more Group V (15) donor atoms (e.g. phosphines and arsines) have been the most studied.

The nature of the metal-ligand bond is an important factor which determines the structure and chemical behavior of the latter compounds. In this respect, most of the studies reported thus far have involved the use of ^{1}H and ^{13}C NMR, as well as infrared (IR), spectroscopy which yield, in an indirect manner, information regarding the nature of the metal-ligand bond. The technique of ^{63}Cu NMR spectroscopy yields the most direct and relevant information regarding the nature of the metal-ligand bond in such complexes. However, despite its usefulness, there have been only a handful of reports on the use of ^{63}Cu NMR for copper(I) complexes. The reason for such a dearth of information on the use of this technique is that ^{63}Cu has a relatively large quadrupole moment which, except in highly symmetrical complexes, results in very broad NMR signals. Moreover, the reported studies have all been performed in the *solution-phase*.

Herein, we would like to report on the first-time observation of ^{63}Cu NMR signals in the *solid-state*. While the solution-phase ^{63}Cu NMR signals are subject to the "symmetry" of the environment around a copper(I) center, the solid-state spectra may be obtained on a variety of complexes with different Cu environments. In addition, this technique offers a unique opportunity to compare the species present in a solid sample of a given copper(I)-arsine or –phosphine complex with those present in its solutions. Details related to the synthesis and characterization of the (triphenylarsine)copper(I) chloride complex, as well as those regarding the acquisition of solid-state ^{63}Cu NMR spectra on it, will be presented.

Jennifer Gray
State Center Community College District
Phyllis Kuehn,
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Poster Board No. 9

Academic Language Proficiency and Science Achievement

Introduction

For many students the barrier to learning science is language. Academic language, the language of textbooks and the classroom, is distinctly different from the everyday spoken language students use. While students may have good spoken English, their lack of academic language is associated with and therefore predictive of low academic achievement in high school and in college. The purpose of this research was to determine how academic language proficiency is related to science achievement.

Method

The sample consisted of students enrolled in an anatomy class (n = 25) at a community college. Students were given two measures of academic language at the end of the semester course: 1) a matching exercise on which students matched prefixes or roots commonly used in science terminology and; 2) a reading completion test that requires students to recognize the correct form of a word that grammatically completes sentences in a simple reading passage. Results are reported for the matching and the reading completion tests. The scores on these two language assessments were correlated with students' lecture and lab exam grades.

Results

Both language tests showed moderately high correlations (r = .49* and .35) with the lecture exam grades but did not correlate significantly with the lab exam grades. The lecture exams rely on higher-level academic language skills than do the lab exams, which rely on visual recognition and identification of anatomical structures. Students who received grades of A on the exams had higher scores on these two academic language assessments than did students who had lower grade averages. The scores were statistically significantly higher only for the matching test, probably because of the small sample size.

Conclusion

The results suggest that students who graduate from high school without well-developed academic language proficiency are at a disadvantage in post secondary science courses.

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Poster Board No. 10

Efficacy Of Etanercept In Refractory Juvenile Spondyloarthropathy

The synovia of patients with juvenile spondyloarthropathy (JSpA) are characterized by the presence of TNF-_ and TNF-_, and cells expressing TNF receptors (p55 and p75). To study the efficacy of etanercept (Enbrel) in JSpA patients who failed immunosuppressive or disease-modifying anti-rheumatic as well as non-steroidal anti-inflammatory drugs, a cohort of 5 patients received Enbrel therapy. All patients in the cohort had JSpA onset at age 16 years or younger (mean 11.5, range 8-16 years). The cohort had 4 males and 1 female, average age was 17.6 years (range 14-25), the average disease duration prior to Enbrel therapy was 6.5 years (range 1.8-17.5), the 4 males were HLA-B27 (+) and the 1 female was (-), and their other medications remained the same during treatment, including methotrexate. Three patients had a history of multiple corticosteroid joint injections. One patient had a hip prosthesis at baseline and had a total arthroplasty of his other hip during the study. All 5 patients had persistent synovitis and an elevated ESR, 4 each had radiographic changes and anemia at the study onset. The Enbrel dosing range was 0.2-0.6mg/kg subcutaneously twice per week; 1 patient had a dose increase while on the study. All patients tolerated Enbrel without any side effects.

Enbrel Duration (months)	**0**	**2**	**4**	**6**	**9**	***p value**
AM Stiffness	34.4	7.2	4.0	6.7	0.0	**0.195**
Active joint count	6.2	2.6	2.2	2.0	0.8	**0.015**
_ Hemoglobin (g/L)	111	125	128	131	140	**0.027**
_ ESR (Wintrobe mm/h)	46.6	20.0	19.8	12.5	13.5	**0.002**
Patient number (N)	5	5	2	2	1	–

***Study significance is p< 0.05.**

All 5 patients showed impressive therapeutic responses with a decreased active joint count, increased mobility, decreased fatigue and overall well-being; 4 had decreased morning stiffness. Anemia improved and the ESR decreased remarkably in all 5 patients. Although 4 patients continue in this one-year study, these preliminary results indicate that Enbrel is an important therapy for refractory JSpA.

Joyce C. Lee
University of California, Davis
Undergraduate Student Presenter
Poster Board No. 11

The Next Tiger?
The Multidimensional Effects of Foreign Investment in Vietnam

The integration of our world through telecommunication and technology breakthroughs has made it a true "global village" in recent years. Many developing countries have in recent decades began to develop their economies with assistance from advanced-industrialized economies with hopes of becoming modern industrial nations in the twenty-first century. While most previous studies have focused on the Asian Tigers of South Korea, Taiwan, Hong Kong, and Singapore, this study focuses on Vietnam, which many scholars believe will be the next newly industrialized country in Asia. Vietnam is the prime example of a developing country with a burgeoning economy, in the quest to become the next Asian "tiger." This project evaluates the possibility of Vietnam becoming the next "tiger" by analyzing the economic, political, environmental, social, and cultural effects of foreign investment on the nation. In order to evaluate the multi-dimensional effects foreign capital and technology invested by multinational corporations in Vietnam have had on this developing country, a literature review was conducted using newspaper, business magazines, academic journals and book articles to gain an understanding of Vietnam's history, and economic and political contexts. This information was then coupled with statistical indicators on Vietnam's economy, drawn from online databases from the International Monetary Fund and the World Bank. All data were transformed into spreadsheet charts and tables for analysis. Literature findings were used to provide anecdotal and qualitative data. Vietnam has benefited tremendously from foreign investment in the past several decades. Economic indicators show that over $8 billion have been invested in Vietnam by the late 1990s. Inflation and unemployment rates have decreased while Vietnam has been growing at an annual gross national product rate of 7%-9%. However, Vietnam remains a staunchly communist nation, and many investors disheartened by the political red tape have turned to other Asian developing nations as investment destinations since the Asian Financial Crisis. The forces of westernization and social transformation have negatively influenced the nation's cultural and social dimensions, as human rights violations, crime and other social problems increase. Vietnam has also suffered grave environmental damage as a result of increasing industrial pollution. These results suggest that it is unlikely for Vietnam to become the next economic tiger if it continues to operate under a communist system of government. Furthermore, negative effects in the political, social, cultural and environmental dimensions may already have outweighed economic benefits gained from foreign investment.

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Management Department
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Poster Board No. 12

Ethical Perspectives and Decision-Making Approaches Used By Business Students

Sometimes situations occur in businesses where employees perceive the same situations very differently from each other. These differences in perception inevitably affect the decisions that are made, thus impacting the business. These differences can be the result of a number of various contributing factors. This study examines how some factors can relate to perception and the decision-making process, especially with regard to ethical situations. The underlying variables that are considered consist of cultural differences, functional background, gender, and experience with ethics in the educational setting. The study involves participants from the Sid Craig School of Business at California State University of Fresno. The participants are students enrolled in different required courses that are mandatory for all business majors. For the purpose of testing for experience with ethics education, students in beginning business courses such as CSB 50 and students in the senior business course of Management 187 were asked to participate in this study on a voluntary basis. As well, these students were asked to indicate their business options for the use of testing for functional background differences among all majors. The participants were also asked to indicate their gender and to describe their cultural background so that these variables could be studied as well. In this study, a survey developed by James R. Harris (1989) was used to determine whether participants perceive various ethical business-related scenarios as being ethical or non-ethical. All of the data has been collected and the results of this study are still being analyzed. However, it is hypothesized that differences will be found among students from different cultural backgrounds as well as different functional backgrounds. Furthermore, it is hypothesized that female students and students with experience in ethics courses will be less tolerant of unethical behaviors than their counterparts.

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Deborah Riordan, M.P.H.,
Public Health Institute/Cancer Registry of Central California
Rosemary Cress, Dr.P.H.,
Cancer Surveillance Program, Region 3
David Goldsmith, Ph.D.,
George Washington University
Poster Board No. 13

Triazine Herbicides and Ovarian Cancer Risk: Methodology and Preliminary Results

A population-based (incidence) case-control study of epithelial ovarian cancer is currently being conducted, in the Central Valley of California, a multi-ethnic and intensively agricultural area. Cases are being identified through Rapid Case Ascertainment (RCA) at two valley population-based tumor registries, the Cancer Registry of Central California (Region 2) and the Cancer Surveillance Program (Region 3). Controls are being selected using Random Digit Dialing (RDD) techniques. After one year of data collection, 217 confirmed cases of epithelial ovarian cancer have been identified and 565 controls agreed to further screening. The histology classification distribution, based on available information, is 49.2% serous, 13.7% endometrioid, 10.5% mucinous, 6.5% clear cell, and 20.2% unclassifiable. 34.4% of the serous tumors and 30.8% of the mucinous tumors were classified low malignant potential (total frequency, 20.2%). The mean age of cases with tumors of low malignant potential is 48.36 years (median: 48) compared to 60.32 for cases with frankly malignant tumors (median: 62).

A structured, telephone-based interview has now been completed with 68 cases and 344 controls.

The response percentage among cases and controls is currently 61.3% and 78%, respectively. The mean time between diagnosis and interview is 112.2 days (median 114 days, range 54-255 days). Only eight (6.7%) identified cases died prior to research contact. The interview focuses on occupational histories and environmental exposures as well as established risk factors of epithelial ovarian cancer. Prior to the interview, cases and controls are mailed a "prompt list" to familiarize them with the nature of the items in the interview and aid in recall. We have evaluated "established" risk factors for ovarian cancer in this first group of cases/controls in an attempt to measure the validity of the study methodology. The crude odds ratios and 95% confidence interval for several of these risk factors include: early menarche (12 yrs. or younger): 1.08 (.62-1.87); nulliparity: 2.29 (1.03-5.00); ever use of oral contraceptives: .44 (.25-.77); never breastfed 2.14(1.15-3.97). These results are consistent with results found in previous studies of ovarian cancer and suggest that the study design is valid and able to detect alterations in risk associated with known and suspected risk factors for this disease.

Data collection activities will continue for another twelve months and risk estimates for environmental risk factors will be calculated, controlling for the above mentioned "established" risk factors.

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Graduate Student Presenter
Poster Board No.14

Asymmetric Synthesis of 6,7 epoxy 3,7 dimethyl citronellyl pivalate

The title compound, an important intermediate in the multi-step synthesis of the active component in the sex pheromone of Aonidiella autantii (California Red Scale), was synthesized asymmetrically from 3,7 dimethyl citronellyl pivalate. The key to the synthesis was use of a recently discovered organometallic reagent (Jacobsen's catalyst) in the oxidation of the alkene. Under the current synthesis plan, a mixture of diastereomers is created during formation of the epoxide. Separation of the diastereomers was accomplished using a Carbowax 20 capillary column on GC/MS, clearing the way for characterization of the single diastereomer created by use of Jacobsen's catalyst. This asymmetric epoxide can then be carried in four steps to the active stereoisomer of the pheromone. The total synthetic efficiency is dramatically increased.

Natalia Moore
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Poster Board No. 15

Generating Basic Sequences

Positional system of notation of numbers has always been one of the most important concepts in mathematics. One of the most famous problems in mathematics is the Goldbach's Conjecture: Can every even integer greater than 4 be represented as a sum of two odd primes? Scientists and mathematicians have always been interested in solving these representation problems.

Definition 1: A set $\{b_1, b_2, b_3, \ldots\}$ of integers is said to be a base for the set of all integers if any integer can be uniquely represented in the form

$$x = \sum_{i=1}^{\infty} a_i b_i \text{ where } a_i = 0 \text{ or } 1, \text{ and } \sum_{i=1}^{\infty} a_i < \infty.$$

Definition 2: The sequence $[d_1, d_2, d_3, \ldots]$ is said to be basic whenever $\{d_1, d_2, d_3, \ldots\}$ is a base.

Techniques for generating basic sequences will be introduced. Necessary and sufficient conditions for basic sequences will be established. Proofs (both direct and indirect) will be given to illustrate the general idea. They will be accompanied by numerous graphs. Several numerical examples will be presented to illustrate the basic principle.

Brian J. O'Roak, G. W. Polack
Alejandro Calderon-Urrea, Ph.D., Faculty Sponsor
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Department of Biology
Undergraduate Student Presenter
Poster Board No. 16

Increasing Protein Uptake in Nematodes by Using the Transduction Domain

Nematodes are some of the most numerous organisms on Earth and inhabit almost every moist environment. There are over 50 known nematode parasitic species that affect humans. Nematodes are also important agricultural pests affecting the roots of plants and livestock. A viable defense against nematode pests in humans, may be oral immunization, since host immunoglobulins (antibodies) have been detected in non-blood feeding ruminant's nematodes. However, it is not known to what extent proteins are absorbed in nematode digestion. Increasing the uptake of antibodies or other proteins could improve the effectiveness in defending against non-blood feeding nematodes.

Recent studies have shown that attaching an eleven amino acid transduction domain of the trans-activating protein (TAT), from HIV, to a protein, will greatly increase its ability to pass through the cell membrane. Using the green fluorescent protein (GFP) as a marker in a bacterial expression system, it may be possible to track protein uptake from bacteria ingestion in the nematode model, Caenorhabditis elegans, and determine to what extent a TAT fused protein is able to be absorbed from the digestive tract. Using standard molecular techniques, the GFPuv gene (Clontech, Palo Alto, CA) and TAT trasduction domain will be cloned into the expression vector pQE30 (Qiagen, Valencia, CA). M15 pREP4 bacteria will then be transformed. Caenorhabditis elegans will feed on these bacteria and ingestion studied using florescent microscopy. As of date, the pQE30GFP construct is complete and functional. The construction of pQE30TATGFP and Caenorhabditis elegans ingestion studies are currently in progress. The completion of this study will provide a greater understanding of nematode digestive system and support the development of new defense pathways against nematode parasites for humans, animals, and plants.

Mark Pinto, M.D.
Paulette Ginier, M.D., F.A.C.P.
Sharon Reynolds, M.S.N.
Paula G. Hensley, R.N.
UCSF-Fresno and
VA-Central California Health Care System
Poster Board No. 17

Diabetes Management

The latest estimate suggests that by the year 2020 over 300 million people worldwide will have Diabetes Mellitus (DM). At VA Central California Health Care System (VA-CCHCS) we currently treat 3,116 veteran patients who have DM. Clinical Practice Guidelines mandate optimal blood glucose and cholesterol control to minimize the devastating complications of this disease. The goal is LDL cholesterol level of at least 130 mg/dl or less. The glycosylated hemoglobin (HgbA1C) test is drawn to determine the long-term average glucose levels in the blood with a goal of < 7%. Analyses of long term blood glucose control of the veterans with DM from August 1999 through July of 2000 show that 81.7% had, at the least, one yearly HgbA1C drawn. Of these, 23.5% had one HgbA1C level greater than 9.5%. Of those, 113 patients had consistently elevated HgbA1C levels, indicated by three or more values above 9.5%. We have characterized this sub-population to better understand and define the parameters that could be helpful in treatment strategies. The mean age of this group is 61 years ± 10 (SD). They are obese with a Body Mass Index (BMI Kg/m2) of 31 ± 6. On the average, they were taking 10 different medications with 69% on insulin injections and 42% on cholesterol medications. There were co-morbid mental health conditions among 17% of these veterans. The average LDL cholesterol was 111 ± 48 mg/dl. Despite very poor blood glucose control, these patients were able to attain good control of their cholesterol. More effective dietary and medication therapy for cholesterol may offer a partial explanation of this discrepancy. Targeting therapeutic interventions and educational efforts for this high-risk group may hold promise for the diabetic patient of the future.

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Undergraduate Student Presenter
Poster Board No. 18

Interaction Effects of Stress and Stereotypes on Self-Efficacy, Task Performance, and Anxiety

The purpose of this experimental study was to examine the interaction effect between induced stress and stereotypes on self-efficacy, task performance, and anxiety. The participants (N=49), all women, completed two words tasks (Augarde, 1998) under four different conditions. In the first condition the subjects received the stress variable, which was an imposed time limit. They also received the stereotype "research has shown that women perform well on these tasks" in their instructions. The second condition received the stress variable with no stereotype. Under the third condition the subjects received the stereotype alone. The last condition was the control group and they received neither manipulation of the independent variables. Following the word tasks the subjects completed an anxiety questionnaire and a self-efficacy survey. This study found a significant effect between induced stress and anxiety levels ($F(1)=11.84$, $p<.05$). Also found was an interaction effect between induced stress and the stereotype on anxiety levels ($F(1)=9.76$, $p<.05$). This study concluded that induced stress will increase the anxiety levels of individuals. The stereotype, alone, did not change the anxiety levels of the subjects, but the interaction between induced stress and the stereotype increased the anxiety levels of the subjects. The findings of this study could be applied to the areas of education and business because the stress and stereotypes are found in great frequency among those two areas.

F. A. Ringwald
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Poster Board No. 19

A Hubble Space Telescope Snapshot Survey of Nova Shells

We present initial results from a snapshot survey of the gaseous shells expelled by nova eruptions from stars. These were taken with Hubble Space Telescope's Wide-Field/Planetary Camera 2 (WFPC2). Nova shells evolve, or change significantly, over only a few years to decades. This contrasts to 10,000 years for planetary nebulae, the remnants of stars like the Sun after they die, on which much recent work has been focused. We therefore intend this survey to be the beginning of a long-term program to observe the dynamics of nova shells, and of astrophysical hydrodynamics (gas flow in space) in general. These nova shells present a case, so rare in astronomy, where we can see the wonders of the Universe unfold before our very eyes. We discover three new shells, around Nova Crucis 1996, Nova Aquliae 1995, and V351 Pop (Nova Puppis 1991), and clearly resolve another, around QU Vul (Nova Vul 1984 #2). The V351 Pup and QU Vul shells appear as rings, although the hollow insides may be due to the filter response. The QU Vul shell shows definite structure in its 1.5-arcsecond diameter ring. Intriguingly, some of the features in this structure corresponds with that seen by the Very Large Array Telescope, shortly after the eruption. The structure of this shell therefore appears to have been set at the very beginning of the eruption.
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Challenges in Manipulating Genomic DNA in Cosmid Vectors: Evaluation of Transformation and Cosmid Recovery Methods

All eukaryotic cells contain RNA splicing components called small nuclear ribonuclearprotein (snRNP) particles and, until recently, snRNP's were thought to be exclusive to eukaryotes. Current evidence, including identified bacterial small RNAs with sequences very similar to the human snRNA, suggests the presence of snRNP particles, particularly the U1 snRNP in a prokaryotic cyanobacterium, *Synechococcus leopoliensis*. The production of antibodies against the U1snRNP is an established criterion for diagnosis of the autoimmune disease systemic lupus erythematosus (SLE). A PCR-amplified U1snRNA probe has been shown to hybridize to selected portions of a cosmid genomic DNA library from *S. leopoliensis*. To sequence the putative cyanobacterial U1snRNA gene within these library cosmids, obtaining small enough fragments of the cosmid inserts which hybridize with the probe was necessary. Several transformation and extraction procedures were evaluated to determine efficient methods for obtaining working amounts of cosmid DNA.

Ten positive samples from the library were identified and the 3H9 sample was chosen to start. Three strains of *E. coli* were transformed using two methods of transformation and three recovery methods. The purified cosmid DNA was digested with various restriction enzymes and separated by electrophoresis. Southern blot hybridization on nylon membranes with a radioactive U1snRNA probe was used to confirm positive fragments.

An efficient way to transform the 27.9 kb cosmid was found using the heat shock method with the DH10B strain of *E. coli*. The MidiPrep kit yielded sufficient amounts of purified DNA. The triple digest enzyme combinations provided the small-sized fragments of DNA (< 900 bp) desired and initial results from the Southern hybridization protocol are promising, but inconclusive.

With efficient transformation and purification methods in place, the ten selected samples from the genomic library can now be evaluated for sequencing-sized inserts. These multiple samples will provide sequencing alignment opportunities which will allow determination of the genomic sequence and its context.

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Conservation of Regulatory Sequences in the 2,4-D Pathway

2,4-dichlorophenoxyacetic acid (2,4-D) is a man made herbicide that has been widely used since 1945 to control dicotyledoneous weeds and is rapidly mineralized by soil bacteria. Bacteria have spontaneously developed the ability to degrade 2,4-D by assembling the genes for each of the pathway enzymes from different sources, developing unique degradative pathways. Little is known about the regulation of these pathways. This study used PCR amplification and DNA sequencing to study the diversity of regulatory genes in different 2,4-D degraders. Our goal was to develop a single set of PCR primers that would amplify tfdR gene sequences in all of our 2,4-D degrading bacteria. Primers were developed using published tfdR sequences from a comparison of Ralstonia eutrohpa JMP134 (Matrubutham and Harker, 1994) and Psuedomona putida EST (Koiv et al, 1998). Conserved regions within the two DNA sequences were selected. The primers were designated KS1 and KS2. They were tested using nine different 2,4-D degrading strains. This resulted in strong bands amplified in strains JMP134, TFD6B, TFD41 and BR16001 (all approx. 400 bp). There were also light bands of E. coli and TFDB6-5, which pose a question of the primer specificity. Some bacterial strains did not amplify, therefore we may need to design other primers or make alterations to our PCR conditions. We have discovered that the tfdR genes in these different organisms are not as similar as expected. It could be that the DNA sequences of the tfdR genes in the different degraders are too divergent to allow amplification by a single set of primers. Some amplified fragments have been sequenced and compared to each other and to sequence databases. Initial findings indicate that the amplified fragments may be quite similar.

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A Replication of Sequential Treatment of Split Word Lists in a Speaker with Apraxia of Speech

LaPointe conducted a study to observe the sequential effect that the application of a treatment program had on the participant's verbal production. The study contained a trained and an untrained set of words. Results revealed different acceleration rates for the trained and untrained sets of stimuli. LaPointe concluded that performance on the trained set progressed at a faster rate and reached a higher level of accuracy than the performance on the untrained set. The present study systematically replicated LaPointe's study. The participant of the study was a 79-year-old male with aphasia and apraxia of speech (AOS). The study used a multiple baseline across two behaviors design. Performance on the trained and untrained sets of stimuli was compared after treatment was applied.

Generally, this study replicated LaPointe's results. This study suggests that utilization of the split list design is an effective method to measure the patient's treatment progess or a change in the patient's performance. The results of this study also provide evidence that LaPointe's treatment sequence is an effective treatment sequence for treating patients with AOS and aphasia. However, applicability of LaPointe's method in clinical settings will not be justified until further replications are conducted.

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Preservation of DNA Extracted from Whole Blood Stored Long Term on Fabric at Different Environmental Conditions for Use in Forensic DNA Analysis

Background: Preservation of evidence collected has been instrumental in solving crimes, such as rape. In this study, we investigated DNA amplification in two blood stained fabrics, under five different environmental conditions, over three timed intervals.

Methods: Blood was collected and stored in vacutainer tubes at 2°C for one year and eight months. The DNA extraction was accomplished through standard Chelex extraction methods from protocols. The target DNA was the Human Leukocyte Antigen (DQA1). DQA1 was amplified through the use of the AmpiType PM+DQA1 PCR Amplification and Typing Kit. The product gel was made from agarose of Low EEO Electrophoresis. DNA from blood stained cotton and polyester fabric was extracted after the fabric had been exposed to the different environmental conditions. These conditions were: a 37°C incubator, a windowsill, the interior of a car, washed in laundry detergent, and buried in soil. The samples were examined for PCR amplification using agarose gel electrophoresis.

Results: Comparison of the PCR amplified DNA extracted from the blood stained samples to the PCR negative control revealed reduced amplification in subsequent time intervals for some but not all of the tests. For both fabric samples from the incubator, the windowsill, the car, and the washed fabric revealed the DNA recovery remained stable after day 29. For both fabrics the DNA amplified product was not evident in the buried samples. Samples extracted after day 69 from cotton that had been stored in the incubator and at the windowsill were stable. All the other samples revealed reduced or no PCR amplified product.

Conclusion: Based on the results we found that overall the DNA amplified product from cotton fabric was better than from polyester fabric. Evidence showed DNA amplification was effected by some but not all of the different environmental conditions over time.

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Characterization of Novel Solar Cell Materials

Development of light weight and efficient solar cells for use in space power applications is of gret interest to NASA and aerospace industries. For deployment and control, it is very important that these materials are made of flexible base and should withstand very hig dosage of radiation as well. Thin film solar cell materials based on coppe indium dilselenide (CIS) have proven to be an excellent candidate for such applications. Recently at the NASA Glenn research center in Cleveland, Ohio, an inexpensive easily scalable deposition technique was deloped for CIS. In this study we report our recenet measurments on two CISsamples from NASA Glenn research center. We performed X-ray flourescence study on these samples and found that Cu compositions vary from 121 net count to 1963 net counts. Se composition vary from 244 to 3064 net count. These measurements were based on integrating the X-ray peaks of these samples. The subtsrate composition also varies in two samples as well. For one sample, the net count was 60, 881 and for sample 2 this count was 65985. These results indicate that even with similar prepartion conditions, composition of the final CIS film can have wide variations in constituents.

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Bridging the Gaps: Service-learning and Community College ESL Students

This research considers the role of community service learning in relation to learning experiences of community college English as a Second Language (ESL) students. Although a large body of research has examined the role of community service learning and learning experiences for K-12 and college "mainstream" populations, to date, very little research has been published with community college ESL student samples. This particular study focuses on a select group of community college ESL students who participated in a community service-learning project at Foothill College in Los Altos Hills, California.

In order to explore the dynamics of the students' response to the service-learning project and to systematically study the role of community service-learning in relation to the academic learning experiences of these intermediate-level ESL students, I employed ethnographic methods of inquiry including participant observation; informal, unstructured interviews; a questionnaire; and photographs.

It was discovered that as a result of participating in the service-learning project, the students developed an appreciation for the ethic of community service in the U.S.A., experienced a sense of empowerment by learning how to become part of the "mainstream" community, and improved their use of American English language/sociocultural skills by applying classroom instruction to a "real world" situation of relevance to themselves.

The research findings suggest that infusing service-learning into the community college ESL curriculum can serve to deconstruct stereotypes, enhance the acculturation effect, improve ESL students' attitudes toward lifelong civic involvement, and positively influence how immigrant students learn.

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Poster Board No. 26

Team Physician Participation in High School Varsity Football: An Observational Study of Sports Injuries

Introduction: A large number of sports injuries in high school athletes are preventable with proper education and intervention by qualified healthcare professionals. Football, as a contact sport, ranks in the top five for sports related injuries. Support staff for football consists of a trainer with a moderate level of education regarding the anatomy and physiology of sports injuries. It was hypothesized that the involvement of a team physician on the sidelines would result in fewer, and less severe, injuries.

Methods: Two schools were examined during the 1999 high school football season. The intervention team received lectures on dehydration, sprains, strains, neck injuries and back injuries; in addition, for each game a Family Practice resident physician participated on the sidelines and recorded injuries. The control team got no lectures and a research assistant observed and recorded injuries from the sidelines.

Results: There were no significant differences in number or type of injuries between the two teams as indexed by chi-square analyses. Descriptive trends were observed for the teams as a whole. More strains and sprains occurred early in the season. Muscle cramping was most common in the third quarter after a sedentary half time. Serious injuries were very rare. Lastly, the overall trend was a decrease in total number of injuries as the season progressed Chi-Square = 47.42, $p < .001$.

Conclusions: No between groups differences were noted. Both teams experienced fewer injuries as the season progressed. It also appears that pre-game warm-ups were more effective than warm-ups after the half. To minimize injuries we recommend early involvement with the team and obtaining the cooperation of the coaches so that procedural changes can be integrated into workout routines. The types and trends of injuries are discussed as well as the experience of interacting with a high school athletic program.