23RD ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM

PROCEEDINGS OF THE 2002 SYMPOSIUM

Convened on

Thursday, April 18, 2002

at the

University Business Center
California State University, Fresno

TWENTY-THIRD 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

Children's Hospital Central California
Research Projects and Administration

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

California State University, Fresno

April 18, 2002

TABLE OF CONTENTS

PREFACE

Welcome to the *23rd 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* has provided two cash awards for the best symposium presentation by a student--one for an undergraduate student and one for a graduate student. *Children's Hospital Central California* 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
Donna Hudson, Ph.D.
Symposium Co-Chairperson

Deborah Stewart, M.D.
Malcolm F. Anderson, M.D.
Sean Shafer, M.D.
Kent Yamaguchi, M.D.
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.
Karl Oswald, Ph.D.
Doug Carey

ALLIANT UNIVERSITY, FRESNO
Merle Canfield, Ph.D.

FRESNO CITY COLLEGE
Edward Lindley, Ph.D.
Rick Stewart

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.

CHILDREN'S HOSPITAL CENTRAL CALIFORNIA
Robert Wells, Ph.D.

EVENT AND PROCEEDINGS COORDINATORS
Millie C. Byers & Barbara Hopkinson
California State University, Fresno

CALIFORNIA
STATE
UNIVERSITY,
FRESNO

April 18, 2002

MESSAGE TO ALL RESEARCH SYMPOSIUM PARTICIPANTS

California State University, Fresno is pleased to serve as the host campus for the *Twenty-third 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

tel: 559-224-3235
SF tel: 415-476-3882
fax: 559-228-6926

email:
dean@ucsfresno.edu

WELCOME
to the 23rd Annual
Central California Research Symposium

Dear Symposium Participants:

It is my privilege to welcome you to the 2002 Central California Research Symposium! The quality of the research displayed is a testament to the strong collaborative relationships between the Central Valley's academic institutions. The incredible dedication of the students and faculty are very evident in the research you will see, and I hope you will be as excited and energized as I am as you explore these presentations today.

Sincerely,

DC Stewart MD

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

Fresno City College
1101 East University Avenue, Fresno, California 93741

Office of the President
(559) 442-4600

March 11, 2002

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

Dear Symposium Participants:

Fresno City College is pleased, once again, to be a sponsor of the Annual Central California Research Symposium. This cooperative venture not only advances the frontiers of knowledge but also 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.

May April 18 be both an informative and enjoyable day for you.

Respectfully,

Arthur D. Ellish
Interim President

mr

Alliant
International University

5130 East Clinton Wy.
Fresno, CA 93727
T 559/456-2777
F 559/253-2267

March 11, 2002

Dear Symposium Participants:

The Fresno campus of Alliant International University, which includes the California School of Professional Psychology, the California School of Organizational Studies, the Graduate School of Education and the School of Social and Policy Studies, is honored to be a sponsor of the 23rd Annual Central California Research Symposium.

Not only is important research being conducted at the higher educational institutions and hospitals in Central California but these institutions are also training our next generation of researchers.

The symposium provides an exciting view of the broad expanse of research taking place in the Central Valley, by featuring the work of Central California researchers from diverse fields. We look forward to presenting research findings from some of our faculty and students and we look forward to learning about the work of our colleagues in other settings.

With Respect,

Gregory Timberlake
Assistant Vice President, Fresno

Children's Hospital
Central California

9300 Valley Children's Place
Madera, California 93638-8762
T: 559.353.3000
www.childrenscentralcal.org

March 12, 2002

Symposium Participants
23rd Annual Central California
Research Symposium
California State University, Fresno
University Grants & Research Office
Fresno, CA 93726-1852

Dear Symposium Participants:

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

On behalf of all the physicians, staff, and volunteers at Children's Hospital Central California, we are proud to be a sponsor of the 23rd Annual Central California Research Symposium which will be held April 18, 2002 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. Vivian Vidoli, California State University, Fresno

Dr. Deborah Stewart, University of California, San Francisco
Fresno Medical Education Program

12:40 ***Alluvial Stratigraphy at Event Center CSU Fresno, Fresno, California***
Robert D. Merrill, Ph.D.

12:55 ***Do Early Enrichment Programs for Medical Education Really Work? The UCSF-Fresno and McLane High School Experience***
Brandon Atkinson, D.O. and William Garnica, M.D.

1:10 ***Assessing the Effects of Soil Fumigants on Microbial Structure and Diversity by Molecular Analysis in Strawberry Crops***
Lori Orosco, B.S.

1:25 ***An Economic Analysis of Alternative Raisin Production Systems***
R. Lynn Williams, Ph.D.

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

2:02 ***A Survey of Radon Levels at Fresno State***
Tony Pixton, Selahattin Guzel, Chue Vue

2:14 ***Rest Site Selection by Fishers (Martes pennati) in the Southern Sierra Nevada***
Amie K. Mazzoni, David Grubbs, Ph.D, Brian B. Boroski

2:26 ***Hispanic Parental Participation at Sunnyside High School***
Pedro Nava

2:38 ***A Survey of International Students' Perceptions of Ethnoviolence***
Eva Yee Wah Wong

2:50 ***Obtaining and Maintaining Salvation in Galatians***
Ray M. Sanchez

3:02 ***Resources Needed to Support an Academic Historic Costume and Textile Collection in an American College or University***
Stacey L. Boyd

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

3:30 **Concurrent Sessions Resume**

Concurrent Session B

University Business Center
Room 192

1:50 ***Grandparent-Grandchild Relationship***
Cherry McFadden

2:02 ***Relationship Between Dyslexia and Spelling Errors***
Rita H. Humphreys, Ph.D., Bonnie J. Kaplan

2:14 ***Eyewitness Identification of Forensically Relevant Inanimate Objects: Firearms***
Matthew J. Sharps, Ph.D., Terri L.Barber, Heather Stahl, Amy M. Boothby-Villegas

2:26 ***Perception of Violence Among Adolescents***
Sean Cooke, M.D., Mahin Bayatpour, M.D.

2:38 ***Organization of Memory for Unfamiliar Objects Within Familiar and Unfamiliar Categories***
Amy M. Boothby-Villegas, Matthew J. Sharps, Ph.D., Michael Nunes, Terri L. Barber

2:50 ***Looking For Success***
Greg S. Goodman, Ed.D., Sharon Brown-Welty, Ed.D., James Bushman

3:02 ***A Study of Ethics Education Within Therapeutic Recreation Curriculum***
Nancy Nisbett, Ed.D.

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

3:30 **Concurrent Sessions Resume**

Concurrent Session C

University Business Center
Room 193

1:50 ***Effects of Methyl Farnesoate on the Tadpole Shrimp Triops longicaudatus***
Will Nelson, Brian Tsukimura, Ph.D.

2:02 ***Increasing Protein Uptake in Caenorhabditis elegans Using the Transduction Domain of the HIV Trans-Activating Protein***
Brian J. O'Roak, G.W. Polack, Alejandro Calderon-Urrea, Ph.D.

2:14 ***A Method for Monitoring Soil Respiration in Alaska's Arctic Tundra Ecosystem***
Leticia Sanchez, Walter Oechel, James Diffendorfer, Glen Kinoshita, John Chalekian

2:26 ***Promoter Fusions to Study Conservation of Regulation***
Jovita Diaz

2:38 ***Cesar Chavez: Aspects of His Early Organizing Years***
Richard De La Garza, Nancy Echeverria, Julia Gonzales, Yara Rivera

2:50 ***Cesar Chavez: The Beginning of His Organizing Years With the CSO and Its Members***
Yara Rivera

3:02 ***Aztec Poetry: Contributions to the Modern Reader***
Sallie Perez Saiz

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

3:30 **Concurrent Sessions Resume**

Concurrent Session D

University Business Center
Room 194AB

1:50 ***VA Cooperative Study Diabetes Trial Glycemic Control and Cardiovascular Complications***
Paulette Ginier, M.D., Yangheng Fu, M.D., Margarette Recalde, O.D., Elizabeth Fox, R.N., Bruce Manzo, Pharm.D.

2:02 ***Parish Nursing and the Potential Role of Family Practice***
Phil Lugo, M.D., Hector Ramos, M.D., Davin Youngclarke, M.A., Susan Hughes, M.S.

2:14 ***Stepwise Discriminant Analysis Classifies Human Acute Leukemias Utilizing DNA Microarray Data***
Ronna R. Mallios

2:26 ***Two Dangerous Assumptions for Health Care Professionals About Pediatric Asthma Interventions***
Diego Allende, D.O., Matt Easton, D.O., Davin Youngclarke, M.A.

2:38 ***The Morbidity and Mortality of Simultaneous Bilateral, Staged Bilateral, and Unilateral Total Knee Replacement***
Cary Tanner, M.D., Vincent Pelligrini, M.D., Marlene Smith, R.N.

2:50 ***How to Make Health Services Teen-Friendly in Fresno County: Providers' Viewpoints***
Pouran Nowzari-Sohrabi, Ed.D., M.S.P.H., Elizabeth Harris, Ramanjyout Muhar

3:02 ***How to Make Health Services Teen-Friendly in Fresno County: Adolescents' Viewpoints***
Elizabeth Harris, Ramanjyout Muhar, Pouran Nowzari-Sohrabi, Ed.D., M.S.P.H.

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

3:30 **Concurrent Sessions Resume**

Concurrent Session E

University Business Center
Auditorium, Room 191

3:30 ***Coupled Nonlinear Vehicle-Structure Interaction***
Tim Loper, Thomas E. Fenske, Ph.D.

3:42 ***Bridge Failures Resulting From Flooding Events***
Josh Bannister, Thomas E. Fenske, Ph.D.

3:54 ***Development of Lightweight Structural Concrete for Shell Structures***
Eva Arrieta, Fernando Bustamante, J. Larralde-Muro, Ph.D.

4:10-4:54 ***The Coming of Age of Model-Based Methods in Phylogenetic Systematics: Controversies and Challenges***
David L. Swofford, Ph.D., School of Computational Science and Information Technology at Florida State University. This presentation is also part of the Biotechnology Seminar Series and the Interdisciplinary Math Lecture Series.

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

Concurrent Session F

University Business Center
Room 192

3:30 ***Activity of Allium SPP.Amendments, With and Without Soil Heating, For Weed Control Via Biofumigation***
Susan B. Mallek, James J. Stapleton, Timothy S. Prather

3:42 ***Electrons as Quasi-bosons in Magnetic White Dwarfs***
Akira Kato

3:54 ***Endangered San Joaquin Kit Fox and Non-Native Red Fox: Interspecific Competitive Interactions***
Howard O. Clark, Jr.

4:06 ***Sea Surface Temperature (SST) Tracers in the Study of Global Climate Change: The Importance of Modern Calibration Before Paleo-Application***
P. Graham Mortyn, Ph.D.

4:18 ***Outlook of Remote Sensing Technology For Crop Management***
Matthew Yen, Ph.D., Daniel Frank, Xiao Ming Yang, Michael Spiess

4:30 ***Comparison of Analytical Methods for the Prediction of Pre-fermentation Nutritional Status of Grape Juice***
K.C. Fugelsang, Ph.D., B.H. Gump, Ph.D.

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

Concurrent Session G

University Business Center
Room 193

3:30 ***Thoreau's Woman: Nature***
Christine Drolette

3:42 ***Verbal Violence and Gender Conflict: Beatrice in <u>Much Ado About Nothing</u>***
Laura Gnagy

3:54 ***The Condition of England***
Raul Hernandez

4:06 ***Willa Cather's Feminine Misogyny: Unlikable Women in One of Ours and My Mortal Enemy***
Teresa Keoppel

4:18 ***The Evolving Nature of Narrative in Non-Fiction Prose***
Gene Urrutia

4:30 ***The Discontinuity in Writing Standards***
Christina Harralson

4:42 ***Noticing the Bricks in the Wall: Students' Beliefs and Emotions in First Year Composition Classes***
Cynthia Ochs

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

Concurrent Session H

University Business Center
Room 194AB

3:30 ***Integrating Team Projects with a Concern for Student Satisfaction and a Minimization of the Free-Rider Effect***
Lisa M. Houts

3:42 ***A Study of Matching Needs for Foreign Students and the Need for Multiculturalism in American Business***
Tom Burns, M.B.A., Diane Decker, M.S.

3:54 ***Monitoring and Benchmarking Performance Indicators***
J.M. Moghaddam, Ph.D.

4:06 ***The Effect of UCSF Fresno Medical Residencies on the Physician Workforce of the Region***
Gene W. Kallsen, M.D., Sandra Duncan, L.C.S.W.

4:18 ***Accountability and Professional Perogative: The Impact of High Stakes Testing on Teacher Agency***
Kimberly Williams

4:30 ***Factors Influencing Cervical Cancer Screening Among Rural Latino Women in the Central California Valley***
Victor M. Torres, Ph.D., M.P.H., Helda Pinzon-Perez, Ph.D., C.H.E.S., Vickie Krenz, Ph.D., M.S.P.H., Sean Schafer, M.D.

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) ***The Influence of Olfactory Stimulation on the Verbal Labeling Abilities of Adults with Aphasia***
Janet Blea, Don Freed, Ph.D.

(2) ***The Prevalence of Neuropsychiatric Systemic Lupus Erythematosus in a Pediatric Population Using the 1999 ACR Case Definitions***
Michael Henrickson, M.D.

(3) ***Effects of Informational and Controlling Rewards on Altruism***
Marcia L. Hyde

(4) ***Heavy Metal Analysis of Herbal Supplements***
Chris Louie, Jose Sy, Ph.D.

(5) ***Composite-Spectrum and Related Stars That Are Candidate Detached Post-Common-Envelope Binaries***
F.A. Ringwald, D.K. Ancalade

(6) ***Investigating the Fluidity of the 2,4-Dicholorophenoxyacetic Acid Pathway Using Random Mutagenesis***
Manuel Cotta, Alice Wright, Ph.D.

(7) ***Central Valley Algal Biodiversity Study***
Kevin Moseley, Rick Zechman, Ph.D.

(8) ***Panmictic Population of Rhizobium Infecting California Native Annual Clovers in Central California***
Leigh Schmidt, J.M.Turner, E.E. Harding, Ph.D.

(9) ***The Effects of Biodiversity on Soil Moisture in Grasslands***
Rachel Kushner, John Chalekian, Douglas Deutchman, Andy Hector

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.

(10) ***Toluene Degradation***
Rory Stuart

(11) ***Treatment Efficacy of Intervention in Self-Regulatory Behaviors in Children Language Disorder and Suspected Attention Deficit-Hyperactivity Disorder***
Steven Skelton, Ph.D., Renee Gagnon, Kathryn Stevens, Rita Humphreys, Ph.D., Christine Maul

(12) ***Estimation of the Inhomogeneity of the Magnetic Field from NMR (Nuclear Magnetic Resonance) Relaxation Time Measurements***
S. Aguilar, N. Armstrong, E. Cordoza, J. Elkins, B. Gliem, K. Watters, C. Wilson, P. Hari, Ph.D.

(13) ***Propagation and Inoculation of Perennial Native Legumes with Rhizobium for Cross-Inoculation Tests to Determine Host Specificity***
Jenny Turner, Leigh Schmidt, E.E. Harding Ph.D.

(14) ***Characterization of Cloned Repetitive DNA in Pepper***
Mark E. Schreiber, James P. Prince, Ph.D.

(15) ***Seasonality of Birth in Alzheimber's Disease***
Cammy Chicota, Michele Russell, Donald Templar, James Frazee, Adam Nelson, Brad Felix

(16) ***The Effect of a Comprehensive Exercise Program in Women with Disabilities***
Dana Faircloth, S.P.T., Jodi Felty, S.P.T., Christina Hamm, S.P.T., Gwen Hawk, S.P.T., Makenzie Heisdorf, S.P.T., Julie Nidever, S.P.T., Kathy Salaiz, S.P.T., Maricela Torres, Jamie Winkelman, S.P.T.

(17) ***Diurnal and Seasonal Ammonia Emissions from Dairy Effluent***
Genett Carstensen, D. Goorahoo, Ph.D., C.F. Krauter, 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.

(18) ***Ammonia Emissions from Cotton during Fertilizer Application and Defoliation***
Matt Beene, B. Roberts, D. Goorahoo, Ph.D., C.F. Krauter, Ph.D., F. Fritschi

(19) ***Ammonia Emission Factors from Monitoring of Fertilizer Applications to Various California Crops***
Charles Krauter, Ph.D., D. Goorahoo, Ph.D., C. Potter, S. Klooster

(20) ***Assessing Potential Canal Seepage with Electromagnetic Technique***
Florence Cassel S., Ph.D., D. Zoldoske, Ph.D., T. Jacobsen, E. Norum

(21) ***Nonlinear Interaction of Fluid-Structures Systems***
Thomas E. Fenske, Ph.D.

(22) ***A Risk Management Project to Compare Interventions to Prevent Back Injury to Nurses***
Diane Hill, R.N., Paulette Ginier, M.D., Paula Hensley, B.S.N.,
Suenell Tordini, R.N.

(23) ***Women's Work and Family Lives: Cohort Differences and Family Patterns***
Constance Jones, Ph.D., Jessica Alvarado, Dan Cahill, Crystal Rodgers,
Fina Soloria

(24) ***Genetics of Host Resistance to Phytophthora Root Rot in Pepper (Capsicum annum)***
Bonnie R. Glosier, Ebenezer A. Ogundiwin, Gurmel Sidhu, James P. Prince, Ph.D.

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

Dr. Saeed Attar	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. Cynthia Earye	United States Deparment of Agriculture
Dr. Chris Henson	California State University, Fresno
Dr. Amir Huda	California State University, Fresno
Dr. Donna Hudson	University of California, San Francisco
Dr. Karl Oswald	California State University, Fresno
Mr. Rick Stewart	Fresno City College
Dr. Robert Wells	Children's Hospital Central California
Dr. Alice Wright	California State University, Fresno
Mr. Davin Youngclarke	University of California, San Francisco

Moderators for Oral Presentations:

Mr. Doug Carey	California State University, Fresno
Ms. Marie Fisk	California State University, Fresno
Ms. Susan Hogue	California State University, Fresno
Dr. Donna Hudson	University of California, San Francisco
Dr. Brian Tsukimura	California State University, Fresno
Dr. Robert Wells	Children's Hospital Central California

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)

Diego Allende, DO
Matt Easton, DO
Davin Youngclarke, MA
UCSF-Fresno Family Practice Residency Program

Two Dangerous Assumptions for Health Care Professionals About Pediatric Asthma Interventions

Introduction: Childhood asthma has been a rising public health concern due to increasing prevalence, mortality and morbidity. Central California has some of the highest rates of asthma hospitalizations for children in the state. The aim of the current study was to use objective, quantitative indicators to assess the effectiveness of an asthma day camp.

Methods: We studied eleven children (ages 6-9) enrolled in a five-day asthma education camp sponsored by the American Lung Association. Parent's attitudes about their children's asthma control were assessed by questionnaire on the first day of camp and at four-month follow-up. Children were tested independently on their knowledge of the disease and its triggers pre- and post-camp. Use of peak flow (PF) meters and metered dose inhalers (MDI) was video taped pre- and post-camp. Two licensed Respiratory Therapists independently rated the videotapes.

Results: Parents' perceptions of asthma control did not increase significantly, $t(6) = -1.6$ and were not correlated to PF or MDI performance at day one (.17 and .01). Knowledge of disease improved, $t(10) = -2.5$, $p<.05$; as did knowledge of triggers, $t(10)=-3.6$, $p<.01$. Correlations between raters on the PF and MDI assessments were high (between .78 and .96; $p<.01$). Combined ratings indicated that average PF did not change, $t(10)= -0.5$; but, average MDI scores increased, $t(10)= -2.4$, $p<.05$.

Conclusions: These results challenge common clinical assumptions regarding young children with asthma. First, parents' reports do not reflect children's actual ability to test lung function or medication administration. Second, asthma camp is associated with an increase in knowledge but it does not increase children's ability to check their lung function or improve medication administration to a clinically meaningful degree (albeit statistically significant). The expected specific effects were largely absent but there may very well be nonspecific benefits to children such as socialization to their disease, peer support or increased comfort in working with healthcare teams.

Eva Arrieta, Fernando Bustamante,
University of Navarra, Spain
J. Larralde-Muro, Ph.D.
California State University, Fresno
Department of Civil and Geomatics Engineering and Construction
Undergraduate Student Presenters

Development of Lightweight Structural Concrete for Shell Structures

The concept of thin-shell concrete roofs developed in the 1950's rapidly gained acceptance among structural engineers and architects. However, due to limitations imposed by the heavy weight and limited strength of the concrete and by the weight of the steel reinforcement, this type of structure did not achieve its full potential and was limited to few applications with small span. Recent developments in materials science have produced strong, lightweight structural materials that are commercially available at competitive costs. Thus, the construction of thin-shell structures with much larger spans may then be feasible utilizing these modern materials. The objectives of the project summarized herein were to develop a lightweight structural concrete first, and then to demonstrate the feasibility of building large-span, thin-shell structures with the lightweight concrete and reinforced with high-strength, synthetic materials.

Structural lightweight concrete was developed experimentally utilizing common Portland cement, lightweight ceramic aggregates and a viscosity reduction admixture. The final concrete mix was achieved by gradually adjusting the cement paste-aggregate ratio while maintaining the water-cement ratio constant. A strength of 30 Mpa ($\approx$ 4,000 psi) and unit weight of 1,500 kg/m^3 ($\approx$ 95 lb/ft^3) were targeted.

The feasibility of building thin-shells for large-span structures was demonstrated in two steps. First, the lightweight concrete reinforced with high-strength fiberglass mesh was tested to determine its strength and stiffness properties. Then, a semi-spherical shell structure was analyzed using two mathematical models one based on a closed form solution of the differential equation of a shell shape and the other based on a finite element solution. From the initial analysis results, of the relatively small and thin structure, it seems feasible to construct a large span shell structure with the developed concrete and reinforced with high strength fibers. Although a relatively small shell structure was modeled, using the preliminary results of stress and deflection and expanding the analytical models to the case of a large structure, the possibility for building a much larger structure with a thicker shell structure seems reasonable. It is planned, though, to build a small-scale physical model to be tested under laboratory conditions and to provide more insight into the validity of the mathematical models.

Brandon Atkinson, DO
William Garnica, MD
Davin Youngclarke, MA
UCSF-Fresno Family Practice Residency Program

Do Early Enrichment Programs for Medical Education Really Work? The UCSF-Fresno and McLane High School Experience

Introduction: The UCSF-Fresno Family Practice Residency Program has partnered with McLane High School to help broaden and invigorate the educational pipeline into the medical field. A three-week medicine camp was developed as a springboard for students into a four-year medical education and research program at a local high school. The literature on the effectiveness of such efforts focuses on the general success of program participants in the absence of meaningful comparison groups. The intent of the current study was to determine the impact of the current program relative to self-selected controls.

Methods: Fifty students enrolled in McLane's Medical Education and Research Program; of these, 29 participated in a volunteer summer medicine camp. Two resident physicians taught one week units with pre- and post-tests on a) health careers, b) basic anatomy & physiology, and c) hot topics for teens. Students' career choices were also measured. Non-participants (n=21) were measured on the same variables at the beginning of the regular school year.

Results: Knowledge was indexed by percent of items answered correctly. Pre-test/post-test analysis indicated camp participants had statistically significant gains in knowledge on health careers (55% to 72%), basic anatomy & physiology (53% to 71%), and hot topics for teens (65% to 76%). Camp participants also improved their awareness of what specific field/job they wanted to do upon completion of training (69% to 96%). Overall, total knowledge scores were higher for participants vs. controls (72% vs. 56%) and more participants had selected a field/job than controls (96% vs. 76%).

Conclusions: The current study suggests that early enrichment programs have a positive impact on knowledge base and improve certainty about career choices both within and between groups. Although students in these programs tend to do well, the question remains as to how much better program participants do compared to matched controls in the absence of self-selection bias?

Josh Bannister, Thomas E. Fenske, Ph.D.
California State University, Fresno
Department of Civil & Geomatics Engineering & Construction
Undergraduate Student Presenter

Bridge Failures Resulting From Flooding Events

This presentation will be on the typical failures of highway bridges that occur during flooding events. The American Association of State Highway Transportation Officials (AASHTO) Bridge Specification does not recognize the primary failure mechanisms that currently happen; even though they represent a significant portion of current bridge failures. The most significant failure mechanisms will be presented; along will analysis procedures to account for their effects in the bridge design process. Recommendations to eliminate/minimize the failure conditions will be presented.

Daniel Kenneth Bauer, Brian Tsukimura, Ph.D.
California State University, Fresno
Department of Biology
Graduate 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 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) removed 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. 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. Sicyonia showed no difference between treatment and control. The American lobster, *Homarus americanus* showed control vitellin to have 6 protein bands arranged in 3 doublets with molecular masses of 118 ± 3.0 kDa and 112 ± 3.7 kDa, 102 ±2.8 kDa and 96 ± 3.0 kDa, 90 ± 2.7 kDa and 90 ± 2.7 kDa, and the treatment vitellin was shown to have 5 protein bands with molecular masses of 108 ± 2.6 kDa, 99 ± 3.0 kDa, 92 ± 2.4 kDa, 88 ± 2.8 kDa and 86 ± 0.5 kDa.

Amy M. Boothby-Villegas
Matthew J. Sharps, Ph.D.
Michael Nunes, Terri L. Barber
California State University, Fresno
Department of Psychology

Organization of Memory for Unfamiliar Objects Within Familiar and Unfamiliar Categories

Human beings remember items in part because of their intrinsic identities, and in part because of the categories those items belong to, into which they can be organized. Gestalt/feature-intensive (G/FI) processing theory predicts that familiar categories may ease the memory processing of given items within those categories, thereby improving recall; in other words, categories of items which are more familiar should result in better recall of items which belong in those categories, *even if the items themselves are unfamiliar.*

This hypothesis was tested. College-aged respondents were asked to remember items, presented one at a time, from different categories, Respondents were also queried as to their familiarity with the categories to be used. Based on these queries, the categories employed were kitchen things (familiar), and seashells, trees of different types, and military vehicles (all unfamiliar). Although the *categories* were familiar (kitchen) or unfamiliar (shells, trees, vehicles) *all of the specific items, including the kitchen items*, were exotic or unusual items *unfamiliar* to the respondents.

The results were consistent with the hypothesis advanced. Even though respondents were unfamiliar with the unusual kitchen items employed, these were remembered significantly better than equally unfamiliar items from the other three (unfamiliar) categories. This finding represents a further successful test of G/FI theory, and also has specific implications for education. It is know that a "prior framework for recall," a knowledge of what type of material is to be presented, is helpful in the understanding of familiar materials. The present finding is the first to show that a familiar organizational framework can prove crucial for learning and remembering even absolutely unfamiliar, novel material. In settings in which subjects or students are confronted with novel information, it is critically important to provide them with an organizational semantic background against which to understand that material.

Stacey L. Boyd
California State University, Fresno

Resources Needed to Support an Academic Historic Costume and Textile Collection in an American College or University

This is a study of resources needed to support an academic historic costume and textile collection in an American college or university setting. The objective of this descriptive study was to investigate what resources are needed to successfully support and maintain a historic costume and textile collection in an academic setting. Twenty-three institutions with an academic historic costume and textile collection were surveyed by telephone to investigate the resources the curator/collection's manager felt were needed to successfully support and maintain a costume and textile collection. The author found that each historic costume and textile collection surveyed was unique in size and content. Although each collection's curator/manager agreed that there are standard methods and resources needed to maintain a historic costume and textile collection, it is rare to find an academic institution that has the funds necessary to properly support and maintain the historic costume and textiles collection.

Howard O. Clark, Jr.
California State University, Stanislaus
Endangered Species Recovery Program

Endangered San Joaquin Kit Fox and Non-Native Red Fox: Interspecific Competitive Interactions

We investigated the interference and exploitation competition between two species of fox: the endangered native San Joaquin kit fox and the non-native red fox. Seven kit foxes and 16 red foxes were radio-collared and tracked via radio telemetry near Lost Hills, California, USA. Home range overlap occurred between the two species; however the activity cores of the individuals did not overlap, indicating that spatial partitioning was occurring. One kit fox was killed, but not eaten, by a red fox, indicating interference competition. Coyotes were the main cause of death for both species of fox. The presence of both the red fox and coyote in kit fox ranging areas Amy present a negative additive effect on the survivability of the kit fox. The employment of mechanisms by kit foxes, such as year round den use, may allow coexistence between kit foxes and coyotes, but not necessarily red foxes.

Sean Cooke, MD
Mahin Bayatpour, MD
UCSF-Pediatric Residency Program
Fresno Medical Program

Perception of Violence Among Adolescents

Introduction: Violence in American society has become an epidemic with a major impact on the public health and safety of our nation. Unfortunately, adolescents over-represent a significant segment both as offenders and victims. It is important to realize that violence is multifactorial and all perspectives need to be explored. We believe the idea of searching for solutions from the teens themselves is unique and has not been reported.

Methods: Teens were asked to fill out a two-page survey both at an outpatient pediatric clinic and at a runaway teen shelter. Survey questions sought to stratify individual risk factors for violence and then asked the teen's perception on why they may have gotten involved in violence, been a victim of violence, and what they thought may help reduce or prevent violent behavior.

Results: A total of 119 surveys were collected (N=80 shelter, 39 clinic). Of teens in the clinic 12.8% (N=5) identified themselves as a victim and/or offender of violence as compared with 33% (N=26) in the shelter. Solutions for prevention or reduction of violence were similar in both settings for "Having more supportive parents" (52%) and "Having both parents" (47%). Differences in opinions between the two groups were "Less violence at home" (53% shelter, 28% clinic) and "More teen support groups" (42.5% shelter, 28% clinic).

Conclusion: A large number of adolescents are at a high risk for becoming victims or offenders of violence. Runaway teens from the shelter are at an even greater risk. Preliminary data suggest that perceptions among adolescents to reduce violence centered strongly on a stable and less violent family unit and on teen support groups in higher risk teens. Physicians and family specialists may direct their efforts in these areas to help reduce violence in their communities.

Richard De La Garza, Nancy Echeverria, Julia Gonzales, Yara Rivera
San Jose State University
Undergraduate Student Presenters

Cesar Chavez: Aspects of his Early Organizing Years

This is a joint research project that explores the dynamics of Cesar Chavez' early years as a community organizer while he lived in the "Sal Si Puedes" community of San Jose during the 1950's. Members of our group have conducted interviews with participants, as well as collected primary source data from the Wayne State University Labor Library which houses the Cesar Chavez papers. Our research demonstrated that the tactical approaches Chavez developed during his "Sal Si Puedes" years in San Jose were applied for the rest of his public life. Our conclusion is clear; to understand the direction of Chavez' career as a labor leader the San Jose years must be carefully analyzed. Our presentation does this.

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

A Study of Matching Needs for Foreign Students and the Need for Multiculturalism in American Business

This is an initial study of multiculturalism in American business and is part of the ongoing study of the needs of the changing student segments at the Craig School of Business. In this study we focus on the development of multicultural human resource programs on a national level.

We have collected and analyzed secondary research on a national level. The research included looking for practices that parallel human resource programs that promote diversity. Our contention was that there is a parallel with exclusion of people from foreign cultures (foreign students) with that of exclusion of people of diverse backgrounds or origin (American minorities and women).

Our previous ongoing studies have focused on Craig School of Business students--most recently our foreign student population. We concentrated on developing information about their intentions upon graduation. We found overwhelming evidence of their intention to work for businesses in the developed world (e.g. United States, Europe, Japan). Now we are looking at the opposite end of the spectrum as to whether these businesses will hire American university educated foreign students. In a future study, we will look at the availability of opportunity of foreign students utilizing their education in the local area.

Our results show that nationally, American business (1) has not embraced multiculturalism due to either cognitive biases, or more importantly, systematic process deficiencies, and (2) will need to embrace multiculturalism in order to be competitive internationally.

Jovita Diaz
California State University, Fresno
Department of Biology
Undergraduate Student Presenter

Promoter Fusions to Study Conservation of Regulation

The tfdA and tfdB genes encode for 2,4-D/a-ketoglutarate dioxygenase and 2,4-dichlorophenol hydroxylase respectively, enzymes required for biodegradation of the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D). 2,4-D is a synthetic chlorinated herbicide developed in 1946 and controls broad leaf plants without harming grasses. It is characterized as a class II, moderately toxic, restricted chemical. Research indicates that bacteria that degrade 2,4-D have assembled a novel catabolic pathway in a relatively short period. This has sparked interest in the evolution of the pathway and has led to studies on the biochemistry and genetics of 2,4-D degradation.

The two bacteria that we are studying are Burkholderia sp. RASC and Ralstonia eutropha JMP134. The biochemistry in each appears the same but there are significant differences in DNA sequences of genes that encode the enzymes. The aim of this study is to investigate promoter function in 2,4-D catabolic pathways. We cloned promoter regions of the tfdA and tfdB genes into a reporter system in plasmid pKRZ1. This allows us to measure expression from the respective promoters by assaying beta galactosidase acitivity, using the method of Miller. The promoters tested showed activity in three species of bacteria, yet expression of each promoter was unique.

To explain these observations, we propose each promoter has a distinct origin, possibly the same origin as the gene it is divergently transcribed from. The DNA sequences of many of the promoter regions from the genes of the 2,4-D pathway in strains RASC and JMP134 show little or no sequence similarity, suggesting different origins. We also observed comparable levels of expression from each promoter in two different species of bacteria. To explain this cross regulation in the two bacterial species, we suggest there is conservation of regulatory function. We propose however, that tfdR is conserved, not the tfd promoters.

Christine Drolette
California State University, Fresno
Department of English
Graduate Student Presenter

Thoreau's Woman: Nature

I am attempting to discover how Henry David Thoreau presents his relationship with nature in order to get as an example of how a very established American Romantic presents the relationship between humans and the natural world. I am going to use this information to try to classify Robert Frost, an American poet on whose stance critics cannot agree. I am looking at how Thoreau describes nature in Walden and The Maine Woods, and how he explains his relationship with nature. Thoreau personifies nature, and even ascribes a gender; nature is a woman. He capitalizes Nature as if it is a woman's name, and refers to her as his wife at times, his mother at others.

He uses his description of the sounds in nature to explain his relationship with her, and it is very different in Walden than it is in The Maine Woods. In the former, Nature is comforting; in the latter, she is an antagonist. In both books, however, Thoreau treats Nature as subordinate to man. Nature was not acting subordinate to Thoreau in The Maine Woods. Nature did not fit into the role Thoreau wanted her to play in this book; she was a force to be reckoned with, and Thoreau did not have control over her like he did in Walden. Therefore, Thoreau did not give her the respect that he gave her in Walden by capitalizing Nature and describing her as beautiful. Based on the way Thoreau describes Nature and explains his relationship with her, it is undeniable that Thoreau views the relationship between humans and the natural world as that between man and woman.

Daniel Frank, Matthew Yen, Ph.D.
California State University, Fresno
Industrial Technology Department
Xiao Ming Yang,
ISIS
Michael Spiess
ATI-Net;

Outlook of Remote Sensing Technology For Crop Management

Precision agriculture is emerging as a general practice for California farmers and growers. Airborne remote sensing technology has been applied in several demonstration projects. Though there are some obvious benefits, e.g. early detection of crop disease and water stress, irrigation planning, variable-rate fertilization, targeted harvesting, pest control, and others. The application of this technology as a regular crop management practice has been sluggish due to several factors beyond economics, specifically turnaround time of flights, image processing, and interpretation. Nevertheless, cost and complexity of such technology continues to drop to the point where the cost is affordable and the processing is simpler. Remote sensing technology presents itself as a viable component of the decision support system (DSS) for farmers and production mangers.

Grapes are a major crop in the Central Valley. Vineyard production is a significant operation in the area and an ideal candidate for remote sensing research. Specifically, Gallo Ripperdan Ranch and Field 13 of the CSUF vineyard were chosen for this study. Aerial images were provided by Airtime Aviation and Agrecon Corporation throughout the growing season. These Images were immediately loaded on a designated FTP site for image analysis by ISIS. Ground truthing was conducted shortly after each analysis. Additional production data was also collected from Gallo to bench mark the images.

Six sets of image data were analyzed in terms of their quality and value for vineyard management. These included multi-spectral images: red, green, blue, near infrared and high-resolution thermal infrared (TIR) bands. Normalized Vegetation Index (NDVI), Stress Index (SI), TIR and near infrared signals will be summarized in terms of growth vigor and crop stress. Major issues of remote sensing technology application will be identified and discussed.

K.C. Fugelsang, B.H. Gump
California State University, Fresno
Department of Viticulture and Enology

Comparison of Analytical Methods for the Prediction of Pre-Fermentation Nutritional Status of Grape Juice

Five methods for evaluating the nitrogen status, Nitrogen o- phthalaldehyde (NOPA), Arginine NOPA, enzymatic ammonia, Formol, and HPLC were compared using 70 Cabernet Sauvignon juice samples. Parallel recovery studies using model solutions of various amino acids and ammonia, present singly and in combination, were also conducted. The results from two fruit processing methods were also compared using both immature and mature berries. The NOPA measurements were significantly higher in mature, pressed whole berry-derived samples, compared with homogenized juice, as expected. Adjustment of formaldehyde pH prior to analysis was found to be critical to consistency of the Formol method. Average amino acid recoveries for the Formol titration ranged from 82 to 99%. Average recovery for proline was 16.9 +/- 0.4%. Ammonium nitrogen was also recovered (84 +/- 3%) in the Formol procedure. Formol results trended significantly with NOPA. The correlation between Formol and NOPA plus ammonium ion was 0.87, with the Formol values generally being higher. The average deviation between the Formol and HPLC plus ammonium ion was 7.3%, while that between the NOPA plus ammonium ion and HPLC plus ammonium ion was -7.3%

Paulette Ginier, MD, Yangheng Fu, MD,
Margarette Recalde, OD, Elizabeth Fox, RN
Bruce Manzo, Pharm. D.
VA Central California Health Care System, Fresno
Geriatrics Extended Care Service

VA Cooperative Study Diabetes Trial Glycemic Control and Cardiovascular Complications

Diabetes mellitus is a major health problem in the U.S., especially in older adults. The majority of diabetics are Type 2, and they are at risk for microvascular (e.g. eye, kidney) and macrovascular (e.g. cardiovascular) complications. Tight glucose control has been shown to reduce microvascular complications and therefore is widely advocated. However, tight control is not without its health-related risks and monetary concerns.

The primary objective of this seven-year randomized controlled parallel-treatment study is to investigate the effects of tight glucose control on cardiovascular events such as heart attack, stroke, peripheral vascular disease and amputations.

Sample size will be 1700 subjects enrolled at 20 VA medical centers throughout the country. Enrollment into the study will occur during the first two years. Follow-up may be up to five years, depending upon when the subject is enrolled. Diabetic subjects who meet eligibility criteria will be randomly assigned to receive either standard therapy (Clinical Guidelines) or intensive therapy, aimed at tight glucose control. The intensive arm will utilize combination therapy (all prescribed medications are already FDA approved for the treatment of DM-Type 2) and frequent blood glucose monitoring to achieve long-term glucose control HbA1c level within normal limits (<6.5%). Standard arm subjects will receive similar treatments but less intensely, maintaining HbA1c level within target range (8-9%) and relieving symptoms of hyperglycemia (high sugar). The study has been powered to detect a 25% reduction in the primary event rate.

Subjects will be monitored closely in clinic every 6 weeks, with telephone consultations available. Adherence to the regimen will be assessed by attendance at clinic visits, frequency of home blood glucose monitoring (using meters with memory), and HbA1c results.

It is not known whether tight control will reduce cardiovascular complications, by far the most prevalent complication in Type 2 diabetics. There is preliminary evidence that tight control may increase these complications, at least initially. Thus it is vital that the effects of tight control on cardiovascular events be investigated.

Laura Gnagy
California State University, Fresno
Department of English
Graduate Student Presenter

Verbal Violence and Gender Conflict: Beatrice in *Much Ado About Nothing*

The intention of this research is to explore the apparent gender conflicts that Beatrice, from Shakespeare's *Much Ado About Nothing* experiences by focusing on her verbal expressiveness and relationship to language. From the text it is clear that she suffers gender conflicts as intense discord between herself, femininity and society. Usually characterized as being witty, Beatrice in reality uses her words as weapons. Rather than expressing happiness or contentment, her humor is formed of sarcasm and scathing challenges. The language that she uses is powerful and describes physical aggression and reveals her dormant ferocity and incorporation of violence into her worldview.

The revealing moment of Beatrice's envy of the privileges of the phallus occurs when Claudio accuses Hero of being a whore. This incident brings to the forefront the painful restrictions that Beatrice experiences with being a woman. Her intense desire for revenge causes her to repeatedly lament the fact that she is not a man. The impotence and powerlessness that Beatrice undergoes clearly indicate that she is frustrated by the limits that her gender imposes. Beatrice has the intentions and reactions of a warrior, but because of the limitations of her sex she is restricted to being a verbal warrior.

Since I will be utilizing psychoanalytic theory, I will justify the usage of using a twentieth-century approach to a 16th century text. Specifically, I will employ Sarah Kofman's concept of female strategy, in this case as verbal identity and expression, to overcome limitations and passivity to better understand the character and behavior of Beatrice.

The nature of Beatrice's verbal expressiveness is located in both her denial of and overcompensation for the lack of the phallus. Her language is a substitute phallus.

Greg S. Goodman
Sharon Brown-Welty, James Bushman
California State University, Fresn0
Clovis Unified School District

Looking For Success

Looking for Success is the product of the Central Valley Educational Research Consortium's first research effort. This study was designed to examine the work of the California Central Valley educators in response to the academic Performance Index. This study examined 118 schools in the eight county region of California's central valley. The study used a survey to gather qualitative data by asking principals, "What, if any, efforts is your school making to improve the education of the lowest achieving students?" Based upon survey responses, six schools were selected for site visits and in-depth study.

Four Major findings:

- A sense of urgency has emerged that something must be done regarding low student achievement.
- Principals are using data to drive their decisions including how to modify curriculum and to diagnose student achievement. Using the data from the testing has promoted more student-centered, individualized instruction.
- Money has been forth coming to fund intervention programs and provide planning monies for under-performing schools. This funding, coupled with added resources in the form of awards for achieving set goals has made a difference at school sites.
- Reform efforts are being targeted school-wide, such as aligning curriculum, w2orking on methodology, and extending the school day.

These particular efforts are designed to help all students. Survey responses and site visitations have clearly demonstrated that many exciting and potentially rewarding educational reform efforts are going on in the Central Valley. This study found a strong sense of urgency in this current push for reform. Increasingly, principals are looking at student achievement data to determine what students are, and are not, learning.

Christina Harralson
California State University, Fresno
Department of English
Graduate Student Presenter

Discontinuity In Writing Standards

An examination of state and national high schools standards yields a contradictory and fragmented view of how to approach writing which does not directly lead to the Educational Testing Service's English Placement Test (EPT), used by the CSU system to place students in remedial writing programs. This difference often allows instructors to assume that high schools are not doing their job. This untrue assumption ultimately interferes with instructors meeting students' needs.

An examination of the values and assumptions of popular movements in writing instruction's history can use the language of each set of standards to illustrate those differences, which are all grounded in the differing theoretical movements, each of which values different aspects of writing. This leads to vastly different definitions of what counts as "good" writing as well as vastly different approaches to the writing process. Because these assumptions remain unexamined, colleges as well as the general public are able to make decontexualized and incorrect judgments about the intellectual life at high schools.

I am not suggesting that writing expectations be forced to comply with each other. Instead, institutions should be aware of each other's standards in order for instructors to better understand and therefore better serve their students

Raul Hernandez
California State University, Fresno
Department of English
Graduate Student Presenter

The Condition of England

In the early 1840s the condition of England was dreadful; severe depression and unemployment were widespread, creating a clear distinction between the social classes with inequalities in areas such as authority, prosperity, working and living conditions as well as education. Perhaps no epoch in British history has been as tense politically and disruptive socially, since both the working class and the middle classes demanded what they considered as essential changes.

This social and political history of the 1840s can best be illustrated through the writings of one of the most influential thinkers: Thomas Carlyle, who composed a variety of themes, reflecting the responsibilities of individuals and the sad reality of the society in which he lived. Carlyle's argument is simple and clear: social reform is essential. He witnessed the social injustice, educational deprivation as well as the industrial cataclysm of the times. Carlyle vigilantly viewed and calculated the readjustments of society. He was frustrated by the Corn Laws, but was pleased to see the rise of Trade Unions who were struggling for existence and survival, fighting against an often-savage tyranny. Most of Carlyle's essays and his contemporaries confirm the vitality of Carlyle as an academic power in nineteenth-century English Society. While many Victorians and contemporary individuals do not agree with his political philosophy, we cannot ignore that Carlyle communicated effectively, nor can we overlook the authenticity and validity of his work.

Lisa M. Houts
California State University, Fresno
The Sid Craig School of Business,
Department of Management

Integrating Team Projects with a Concern for Student Satisfaction and a Minimization of the Free-Rider Effect

This presentation explains how to utilize a team writing project and oral presentation, in this case in a management class, while trying to minimize the free-rider effect in the group and enhance team member satisfaction. The free-rider effect occurs when some team members do not pull their own weight, requiring other members to pick up the slack or resulting in diminished performance for the team. This presentation will suggest one technique for better assuring that all group members will participate, will be very familiar with the subject being studied, and will contribute to the final group project.

After completing a three-part research assignment, students were surveyed in class to determine their reactions to the assignments and the team structure. A five-point rating scale was used to analyze student perceptions. For some questions, there was also room for students to add written comments.

Of the thirty-three respondents, only two (six percent) expressed dissatisfaction in working with their team members. Sixteen percent were somewhat satisfied and the remaining 78 percent were either satisfied or very satisfied. The students overwhelmingly reported that the methodology of the project helped ensure that individual team members were well-prepared to contribute to the project's success, and that it helped ensure that each team member did his share for the oral and written team reports. Eighty-seven percent of the students believed that first phase of the research project, which consisted of individual analyses by each student, was somewhat to very helpful in ensuring that all team members were familiar with the topic before they started working together on the oral and written components of the report. Eighty-four percent of the students reported that the methodology of the project was moderately to very helpful in minimizing the free-rider effect in the group. Further survey feedback and comments from the student surveys will be included in the presentation.

This method appears to have facilitated synergy within the group, as well-prepared students moved from individual study and analysis of their topic areas to blend their ideas into a team project.

Rita H. Humphreys
California State University, Fresno
Dept. of Communicative Disorders and Deaf Studies
Bonnie J. Kaplan
University of Calgary
Alberta Children's' Hospital

Relationship Between Dyslexia and Spelling Errors

Objective: To determine the relationship between type of spelling error and dyslexia.

Method: In total, 409 males and 377 females participated (average age=29.03 years, sd=16.84). Phonological skills were tested with the word attack subtests from the Woodcock Reading Mastery Test (Woodcock, 1987) and the Woodcock-Johnson Psychoeducational Test-Revised (Woodcock, 1989), and the Auditory Analysis Test (Rosner, 1971). The Wide Range Achievement Test-Revised (Jastak, 1984) was evaluated using a modification of Moats' approach (1993). To separate words into phonological, visual, or mixed/unclear spelling error types, each individual phoneme error was evaluated/categorized as phonological or visual. The overall spelling error code was based on comparing the total l number or phonological errors to the total number of visual errors overall in the first 10 words with spelling errors.

Results: In total, 35.2% of the 786 samples were coded as phonological errors, 14.9% were coded as visual errors, and 49.9% were coded as mixed/unclear. Children usually had errors that were either mixed/unclear or phonological, while adults usually had mixed/unclear errors. There was a significant association between spelling error category and categorization for dyslexia ($\chi^2(4,N=786) = 158.47, p<.001$). In terms of probability, the children who made primarily phonological errors had a 90.0% chance of being coded as affected for dyslexia, while those who made primarily visual errors had a 45.2% chance of being coded as unaffected for dyslexia. Adults making primarily phonological errors had a 70.1% chance of being coded as unaffected for dyslexia, and those making primarily visual errors had a 68.6% chance of being coded as unaffected for dyslexia.

Conclusion: Having predominantly phonological spelling errors was associated with having dyslexia.

Gene W. Kallsen, MD
Sandra Duncan, LCSW
UCSF-Fresno

The Effect of UCSF Fresno Medical Residencies on the Physician Workforce of the Region

The purpose of this study is to determine what proportion of the active physicians practicing in our six-county region received at least part of their graduate medical education ("residency") at our UCSF Fresno Medical Education Program. Other major contributors to the local physician workforce are identified and compared with UCSF Fresno.

The AMA Physician Masterfile was searched for active physicians in the counties of Fresno, Kings, Madera, Mariposa, Merced and Tulare. Up to five sites of residency training are identified for each physician. Programs with multiple graduates in the region were identified and sorted by frequency.

There are 2744 physicians in the six-county region. After excluding resident physicians, retirees and inactive physicians, 2169 physicians remain in the active study category. 451 (20.8%) of them received at least part of their residency training at UCSF Fresno. LA County-USC with 93 physicians (4.3%) is the next largest contributor. The five UC main campus residencies combined provided 238 (11.0%) physicians to the local workforce. Residencies at California's three other medical schools (USC, Stanford, and Loma Linda) collectively provided 185 (8.5%) of our physicians. Cook County Hospital was the largest out of state supplier with 37 (1.7%).

UCSF Fresno provides residencies in Family Practice, Internal Medicine, Pediatrics, OBG, Emergency Medicine, Psychiatry and General Surgery. Of the 1450 physicians practicing one of those specialties in the region 25.9% were locally trained (38.0% for Fresno County). Our regional physician workforce remains low with 133 active physicians/100,000 population compared to ~190 in California and nationally.

In conclusion UCSF Fresno is by far the largest contributor to our underserved regional workforce providing 20.8% of all active physicians and 25.9% of those practicing a discipline that is taught here. A locally trained resident physician is ~60 times as likely to practice here than a main UC campus resident.

Teresa Keoppel
California State University, Fresno
Department of English
Graduate Student Presenter

Willa Cather's Feminine Misogyny: Unlikable Women in *One of Ours* and *My Mortal Enemy*

Willa Cather created women characters of strength, self determination and will. As a feminist, one is encouraged by these portrayals of women in a positive light. It is, then ironic to discover that the women characters of Enid in *One of Ours* and Myra in *My Mortal Enemy* who also display characteristics of strength, self determination and will are disliked by women readers. This negation of female characters who somehow do not fit the proper mold of what a woman should be is a stifling of women's roles, opportunities and worlds of possibility. Women lose power when they must continue to fight the very people they should be able to look to for support in their on-going struggle to be . . . Human.

This essay will explore the attributes of Enid and Myra that lead to their unlikability. I will explore the possibility that it is not the women that are unlikable, but it is their juxtaposition against male characters of less strength or will that points to the perception that these female characters are unlikable, that it is our enculturation into societal roles that leads to a feminine backlash against women of strength and will. By embracing Enid and Myra, women can embrace themselves. It is through acceptance of women in all their ways of being that we will eventually incorporate whole, unified female characters in the literary and eventually, American landscape. I will attempt to deconstruct the underlying assumptions that women must behave in certain ways to be acceptable to society. In conclusion I would like to point to a revisionist reading of these characters that allows them their personality, flaws and all, and points to women characters of a fully rounded conception and likability based on reality and an embracing of all that is feminist/female, not just the politically correct or socially acceptable.

Tim Loper, Thomas E. Fenske, Ph.D.
California State University, Fresno
Department of Civil & Geomatics Engineering & Construction
Undergraduate Student Presenter

Coupled Nonlinear Vehicle-Structure Interaction

Supporting structures for traversing vehicular loads are complex structures to analyze due to the coupled dynamic interaction between the vehicle and the supporting structure. In other words, when the behavior of one system affects the response of another, the entire system is termed "coupled". This coupling of the system responses creates a nonlinear dynamic interaction problem. Until recently, the dynamic interaction analysis was simplified in engineering practice by employing an impact factor to account for the dynamic interaction effect. This impact factor simply increased the static load effect. However, in the investigation of the Arabat Cultural Center in Moscow, Russian Federation, the coupled dynamic interaction was incorporated into the design process. This incorporation was necessary due to the Moscow Subway passing through the Cultural Center's garage (sub-floor level). The details of this coupled dynamic analysis will be presented.

Phil Lugo, MD, Hector Ramos, MD,
Davin Youngclarke, MA, Susan Hughes, MS
UCSF-Fresno Family Practice Residency Program

Parish Nursing and the Potential Role of Family Practice

Introduction: Parish nursing (PN) can be characterized as non-invasive nursing support within a church setting. Fresno has a new program intentionally placed in congregations with numerous barriers to health care access such as poverty, cultural issues and insurance status. UCSF-Fresno Family Practice Residency Program is dedicated to enhancing access for such populations. The aim of the current study was to systematically survey PN program activities to determine an appropriate supportive role for family practice.

Methods: This is a descriptive study looking at five church congregations spanning seven months beginning in June 2001. Parish nurses logged their activities daily. These activities were then categorized into five groups: patient contacts, community relations, education, health services and program development.

Results: A total of 732 activities were logged. Patient contact comprised 33% resulting in 106 referrals. Community contacts with over 50 separate agencies made up 12%. Educational activities (e.g., asthma, nutrition and stroke) accounted for 3%. Health services for larger groups (e.g., health fairs, breast cancer and blood pressure screenings) were 4%. A variety of tasks aimed at program development accounted for the remaining 48% of activities. The distribution of activities varied by parish. Median hours spent on patient contact, community relations, education, service and program development were 0.5, 0.5, 1, 3, and 1, respectively.

Conclusions: Two sets of activities seem to complement current PN activities. First, family physicians can and should participate in health services such as health fairs and screenings. Second, due to the fledgling status of some PN programs, family practice should be actively involved in developing programs to maximize their impact. In addition, family practice could help by providing direct referral and communication between parish nurses and our clinics. Incorporating parish nursing with family practice provides another avenue for socially and economically disadvantaged people to successfully access the health care system.

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Activity Of *Allium* Spp. Amendments, With And Without Soil Heating, For Weed Control Via Biofumigation

As an atmospheric ozone depleter, the soil fumigant methyl bromide is scheduled to be phased out in the United States by 2005. As a result, there is an urgent need for development of alternative methods of soil disinfestation for use by growers. Numerous studies have reported the advantages of soil solarization for control of certain weeds and soilborne pathogens. Crucifers have demonstrated biocidal activity, both as green manures (biofumigants) and when combined with solarization. Experiments described in this presentation comprise a preliminary study to examine herbicidal effects of incorporating dried residues of onion (*Allium cepa*) or garlic (*A. sativa*) into soil microcosms, at concentrations of 1 or 3% at ambient (23 C) and sublethal (39 C) temperatures, on several important weed species. Results showed a deleterious effect of soil-incorporated *Allium* amendments on viability of barnyardgrass (*Echinochloa crus-galli*) and London rocket (*Sisymbrium irio*) seeds at 39 C. Biofumigation treatments of *Allium* amendments, combined with soil heating, appear to have potential as a non-traditional means of soil disinfestation in high-value horticultural crops

Ronna R. Mallios
UCSF - Fresno

Stepwise Discriminant Analysis Classifies Human Acute Leukemias Utilizing DNA Microarray Data

Acute lymphoblastic leukemia (ALL), mixed-lineage leukemia (MLL) and acute myeloid leukemia (AML) have been shown to be distinct diseases requiring different therapeutic interventions. A recent study appearing in Nature Genetics examined the gene expression profiles of 72 patients diagnosed with ALL (n=24), MLL (n=20) and AML (n=28). For each subject, purified mRNA from peripheral blood or bone marrow was radioactively labeled and hybridized to an Affymetrix DNA microarray, comprised of 12,583 gene fragments. Further processing and analysis with Affymetrix GENECHIP software produced measures of gene expression for each gene and subject. In addition to reporting their results, the authors (Armstrong et al.) cited their data sharing website http://research.dfci.harvard.edu/korsmeyer/MLL.htm. By making their data publicly available they have enabled other researchers to do further analyses, thereby increasing the cost-effectiveness of their funding. Given a set of observations that have been classified into mutually exclusive sets and a list of potential predictor variables, Stepwise Discriminant Analysis (SDA) builds mathematical functions that classify observations into one of the defined sets. The algorithm selects in the most significant predictor first and successively adds predictors until no non-redundant predictors remain. In this analysis there were 72 observations (subjects) and 12,583 potential predictor variables (expressed genes). SPSS 11.0 for Windows successfully stored the entire database and was able to analyze 1,500 possible predictor variables at a time. Nine successive implementations of SDA produced 311 significant predictors. A final analysis of these 311 predictors produced a model with 9 predictor variables that classified all of the cases correctly. An additional analysis utilizing principal components (to reduce predictor dimensions) identified 5 groups of genes that also performed with 100% accuracy. This study demonstrates how computerized data analysis will interface with microarray biotechnology to impact the future of medical knowledge. Comparing gene expressions between the sick and well will identify molecular-biological disease pathways; comparing diseased tissue treated with various drugs will identify efficacious and toxic agents.

Amie Mazzoni, David Grubbs
California State University, Fresno
Brian B. Boroski
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Rest Site Selection by Fishers (Martes pennati) in the Southern Sierra Nevada

The fisher (Martes pennanti) is a medium-sized forest carnivore whose range has been greatly reduced due to over-trapping and extensive logging in the late 19th and early 20th centuries. Diminishing fisher populations have led to the listing of this mammal as both a California Species of Special Concern and a Forest Service Sensitive Species and the filing of a recent petition for listing under the Federal Endangered Species Act. The conservation of the southern Sierra Nevada population is of special interest because the nearest population to the north is greater than 400 km away. The fisher may be sensitive to forest management activities, which directly affect important characteristics related to habitat quality such as the reduction of large diameter trees and snags (dead trees), and canopy closure through logging and burning. Most of what is known about the habitat requirements of the fisher is a result of research of eastern and northern fisher populations. The habitat characteristics in these areas differ from that of the southern Sierra in dominant vegetation types and prey availability. In order to gain a better understanding of the habitat requirements of the southern Sierra fisher population, ten fishers were radio-tagged and tracked over a two-year period. Seventy-eight rest sites were identified during the study period. Selection by fishers of individual rest structures and habitat characteristics associated with them was examined. 160 1-hectare random plots were sampled and compared with 53 1-hectare plots immediately surrounding rest structures to determine habitat selection. Trees and snags used by fishers for resting were large diameter (mean = 99.20 cm) and frequently had mistletoe infestations. Fisher habitat characteristics including high canopy closure, crown volume, log cover, basal area, canopy layering, and large snag abundance were found to be significant ($p < 0.05$) factors contributing to fisher rest site selection.

Cherry McFadden
California State University, Fresno
Department of Child, Family and Consumer Sciences

Grandparent-Grandchild Relationship

The purpose of this study was to explore the young adult's perception of the grandparent-grandchild relationship. This study used a convenience sample of 164 students. These students met the following criteria for inclusion in this study, participants (a) had to be a college student and 25 years or younger, (b) had to know at least one grandparent, and (c) had to have a grandparent that was currently living.

Demographic characteristics collected included age, gender, ethnicity, academic major, class, family form/structure, and geographic proximity to the grandparent to whom they felt closest. Participants were asked to identify the grandparent to whom they felt closest. An item addressed the amount of current contact with the identified grandparent. It was rated on a 9-point Likert-type scale ranging from "daily" to "almost never." Two scales were used, an Expectations of Grandparents scale and a Grandparent Role Quality scale.

There was a significant positive relationship found between the grandchild's expectation of the closest grandparent and the quality of the grandparent-grandchild relationship, $r(163) = .394$, $p = .000$. There was a significant positive relationship between the grandchild's perception of the current quality of the relationship and current degree of closeness with the identified grandparent, $r = .625$, $N = 110$, $p = .000$. A significant positive relationship was also found between the grandchild's perception of the current frequency of contact and the current quality of the relationship, $r = .259$, $N = 113$, $p = .006$.

Findings of this study suggested that the grandchild's emotional closeness to a grandparent was related to the quality of the relationship. Findings also suggested that current personal contact and expectations of the grandparent are each individually related to the grandchild's perceived quality of the relationship with his/her grandparent.

Robert D. Merrill, Ph.D
California State University, Fresno
Department of Earth and Environmental Sciences

Alluvial Stratigraphy at Event Center CSU Fresno, Fresno, California

The excavation for the Save Mart Center at California State University Fresno presents a rare opportunity to examine the alluvial materials comprising the valley floor in the Fresno area. Exposed in the pit are three distinct alluvial units interpreted to be stream deposits. Some of these alluvial units bear an overprint of soil formation.

The bottom of the pit contains a poorly sorted silty sand which is overlain by two different units. In the north wall of the pit the overlying unit is a silty clay that contains root traces and a crinkled clay rich zone, which is desiccation related. In the south wall of the pit, a very distinct, well-sorted sand lens rests on top of the basal silty sand. This well-sorted sand and its correlatives in the north wall of he pit have cut into and through a soil hardpan unit exposed in the northwest and the southeast part of the excavation. Exposed in the top six to eight feet of the pit, is an iron stained clayey and silty sand, which is overprinted by soil formation and exhibits a downward increasing reddish brown discoloration. This reddish brown discoloration stops abruptly at the top of the well-sorted sand unit.

These sediments represent flood plain sediments deposited by a small alluvial creek that formerly flowed through the area. The clay rich sediments exposed in the north wall represent overbank flood deposits which at times dried up and became vegetated. The well-sorted sand lens in the southern wall of the pit represents a long-lived stream channel that reworked the underlying silty sand. The reddish brown color of both the soil hardpan and the uppermost clayey and silty sand is due to downward migration of iron in the vadose zone under climates wetter than today.

J. M. Moghaddam, Ph.D.
California State University, Fresno
The Sid Craig School of Business
Department of Management

Monitoring and Benchmarking Performance Indicators

This study reports findings of a research survey on various financial- and quality-related performance indicators. It presents the perceived importance of these indictors and the extent to which they are used, monitored, and benchmarked. The electronic and other electrical equipment and components industry in United States provided the frame for this research survey. There are various means of monitoring the outcomes of a performance measurement system. In addition to merely measuring performance, a manufacturer can monitor the deviation of each performance indicator and track its directional changes (trends) over time. Moreover, through benchmarking, a manufacturing firm can learn about the best practices, set new goals, and improve its performance.

This study found that relatively fewer manufacturers monitor the standard deviations of their performance indicators. Conversely, more manufacturers track the directional changes of their performance indicators. A comparison of the two groups of performance indicators revealed that manufacturers are overall more concerned about the directional changes of the financial-related indicators than the quality-related indicators. More of them monitor the directional changes of financial indicators such as of budget variation, sales volume/revenue, and profitability. As for the quality indicators, the directional changes of internal failures (e.g., rejects/defects) and external failures (e.g., warranty and liability/litigation) receive a higher level of attention. Likewise, this study found that manufactures are overall more concerned about benchmarking financial indicators such as profitability, sales volume/revenue, and cost of good sold than quality indicators.

This study also found that manufacturers perceive the quality-related indicators to be overall more important than the financial-related indicators. However, they place significantly lower emphasis on the quality-related indicators in comparison to their perceived degrees of importance. Such a lack of sufficient emphasis is more pronounced with regard to the top management involvement, education/training, employee involvement/empowerment, complaint resolution time, and total cost of quality.

P. Graham Mortyn, Ph.D.
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Department of Earth and Environmental Sciences

Sea Surface Temperature (SST) Tracers in the Study of Global Climate Change: The Importance of Modern Calibration Before Paleo-Application

The temperature of the global ocean is probably the most important physical variable in the study of global climate change. As the oceans are both the heat and moisture source for water vapor and clouds, sea surface temperatures (SSTs) are essentially responsible for modulating global weather. In the study of past climate change, necessary in order to discern that which is human-induced, modern calibration of the tools used to reconstruct SST is of paramount importance before we apply these tools to the geological record. I will discuss 2 different geochemical tracers, oxygen isotopic compositions (d18O) and Mg/Ca ratios, commonly used to reconstruct SST in fossilized planktonic foraminifera that are routinely buried and preserved in deep-sea sedimentary archives of climate change.

Though these approaches have both been used extensively in the paleoceanographic record, it is the collection of modern, stratified plankton tows that allow us to verify how robust are the geochemical variations with respect to temperature and other parameters, such as nutrient composition in the oceanic water column. With this approach, recent results suggest that different species can be used to reconstruct the stratification of the surface ocean in the past, extremely valuable in the context of heat exchange between the ocean and the atmosphere. In addition, nutrients can be shown to significantly affect Mg/Ca variability and potentially obscure its relationship to temperature. If nutrients are accounted for and corrected for, however, the sensitivity of the Mg/Ca vs. temperature relationship can be improved.

Pedro Nava
California State University, Fresno
Kremen School of Education and Human Development
Graduate Student Presenter

Hispanic Parental Participation at Sunnyside High School

This research study investigates possible explanations for the low levels of parental participation of Hispanics at Sunnyside High School, in south Fresno. There is considerable evidence that parent involvement leads to improved student achievement, better school attendance, and reduced dropout rates, and these improvements occur regardless of the economic, racial, and cultural background of the family (Flaxman & Inger, 1990). There is a general consensus that the majority of Hispanic parents do not participate sufficiently in the education of their children at Sunnyside High. Therefore, this research assesses Hispanic parents' perceptions and understanding of parental participation in order to propose new strategies of involvement that are culturally appropriate, in order to increase participation of Hispanic parents as a means to augment the learning outcomes of Hispanic students.

Will Nelson, Brian Tsukimura, Ph.D.
California State University, Fresno
Department of Biology
Undergraduate Student Presenter

Effects of Methyl Farnesoate on the Tadpole Shrimp Triops longicaudatus

We have tested the effects of the crustacean hormone methyl farnesoate (MF) on the invasive tadpole shrimp species Triops longicaudatus. This species infests rice fields in the San Joaquin valley. The shrimp cause rice crop damage by dislodging growing rice cotyledons while foraging. When the rice fields are inundated, encysted tadpole shrimp eggs in the soil hatch, releasing tadpole shrimp larvae. It is believed that MF inhibits gonadal development. If this is the case, the use of MF on the rice fields could drastically reduce the population sizes of tadpole shrimp in successive years.

We produced two MF concentrations (0.0001 and 0.001 % by weight), along with a control pellet with no MF. To test the possible effects of MF, we ran one field test in a Koda Farms rice field and several lab trials in which we fed each of three groups a specific pellet type. At day 5 half the shrimp from each group were collected, dissected, and analyzed for ovarian production. At day 10 the remaining shrimp were collected, dissected, and analyzed. In the field trial we used collected only on day 5. The results from the field trial showed a significant decrease in oocyte production for both of the MF concentrations. In the lab trials we used two different feed types: pellets coated with MF, and pellets that had MF incorporated during the mixing process.

The results from the lab trials were mixed; the MF-coated feed showed significant results and MF-incorporated feed did not. The failure of the lab trials in which the MF-incorporated feed was used to show a significant effect for MF was possibly due to flaws in the development of the feed. Based on the successful trials of the MF-coated feed, we believe MF does inhibit gonadal development.

Nancy Nisbett, Ed.D.
California State University, Fresno

A Study of Ethics Education Within Therapeutic Recreation Curriculum

Professional ethics and a knowledge base are two characteristics used to define a profession (Sylvester, 1985). According to Fain (1985a), adherence to a code of ethics provides a profession with unity, integrity and autonomy, crucial for the survival of the profession. As future professionals, therapeutic recreation students are expected to learn and follow the ethical guidelines of their chosen profession. The ethics education received by these students' serves three important purposes. This training imparts competence, prepares students for a diverse client base, and prevents stress, burnout and cynicism (Lahey, 1985).

The questions of how students obtain ethics education and what is included have yet to be answered in the literature (Shank, 1996). The absence of guidelines in this area makes the content and delivery choices of the educator crucial. According to Fain (1985b), ethics education not only influences the daily behavior of the practitioner, it ultimately guides the future direction of the profession. Since very little literature is available, the purpose of this study was to explore the current state of ethics education within therapeutic recreation programs.

The literature reports a pronounced absence of ethics education in therapeutic recreation curriculum (Lahey, 1985; Sylvester, 1985). Practitioners cannot be expected to use ethics to guide their practice if they are not taught how to use these guidelines, This absence has been considered to contribute to the profession's trouble when confronted about its role in health care, the efficacy of its services, and its philosophical debate (Lee, 1987; Shank, 1996). To date, no consensus has been reached regarding how, or what components of ethics should be taught.

Pouran Nowzari-Sohrabi, Ed.D., MSPH
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How to Make Health Services Teen-Friendly in Fresno County: Providers' Viewpoints

Introduction: The study conducted in the summer of 2000 exploring barriers to preventive health services utilization by adolescents highlighted the need for teen-friendly health services in Fresno County. This study was designed to explore providers' ideas on how to increase youths' health services utilization by making the services more teen-friendly.

Methodology: A survey tool was developed and mailed out to 137 CHDP providers. It focused on providers' views on major adolescents' health issues, what is a teen-friendly office, their comfort with treating teenagers, etc. The response rate was 21%.

Findings: Participants consisted of 44% male, 56% female. A range of 5%-25% of their clients consisted of teens. They viewed substance abuse, pregnancy, risky sexual behaviors, smoking & obesity as the major adolescents' health issues. They perceived confidentiality, insufficient knowledge of preventive care, not feeling sick and denial as the major utilization barriers for teens. Ninety-six percent (96%) stated they routinely screen for tobacco use, 80% for substance abuse, 76% for school performance, 72% for sexual activity, 60% for abuse, 54% for eating disorders but less than 50% for depression, suicide, or gang involvement. Eighty-eight (88%) feel comfortable talking to teens. Less than 50% felt their office was teen-friendly. Two-thirds of participants welcomed the idea of becoming a teen doctor. They made recommendations similar to teens' for teen-friendly offices. Health Department can assist by establishing teen hotline, suicide hotline, free confidential information, mental health services, training & workshops on teen issues. In general they think providers are not prepared to handle teens' psychosocial issues.

Conclusion: This study documents the providers' views on their current practices handling teenagers and recommendations for teen-friendly health services. It indicated that providers are uncomfortable handling mental health issue, suicide, and gangs associations. The results will be used to provide training on standards and guidelines on screening and handling teens as well as developing a community and educational resource guide for teens, parents & providers.

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How to Make Health Services Teen-Friendly in Fresno County: Adolescents' Viewpoints

Introduction: The adolescents' low utilization rate of preventive health services clearly highlights the need for teen-friendly services and outreach programs focusing on risk behaviors in Fresno County. The present study was designed to explore adolescents' ideas on teen-friendly health services.

Methodology: In 2001, three focus groups were conducted at Boys and Girls Clubs, Sanctuary School and Youth Shelter where teens would most likely meet the 200% of poverty level criteria. Two trained high school students conducted the focus groups. Questions focused on adolescents' views on discouraging elements in visiting doctor's office, factors associated with a teen friendly office, if they confide in providers with confidential issues, etc.

Findings: Twenty-six adolescents (64% male & 36% female), ages 13-18 (median age 15), attending schools in Fresno, Clovis and Central Unified, Sanctuary school and shelter participated in the focus groups. Ethnicity represented 32% Caucasian, 28% Khmer, 28% Latinos, 8% African American and 4% Hmong. Discouraging elements included shots, long waits, feeling unsafe, negative treatment by staff, lack of confidentiality, general atmosphere of the office, and no need. When they enter doctor's office they see a scary place with no windows; bored, sick children & old people; old magazines & posters; mean & rude office staff. Majority of participants would never confide in providers regarding confidential issues such as suicide, substance abuse, smoking, eating disorders, gang involvement, sexual activity, pregnancy and STDs. They recommended the following for teen-friendly offices: teen magazines and resources on teen issues, windows, bright colors, a separate teen section, daycare for small children, short waiting time, congenial staff, understanding provider who talks with, not questions, them.

Conclusion: This study documents the views of low-income high-risk adolescents on what constitutes a teen-friendly office. The results will be used to design teen-friendly health services and outreach programs such as teen advisory committee, teen website and necessary training for providers. The results may not be generalized to youths of higher economic status.

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Department of Biology
Undergraduate Student Presenter

Increasing Protein Uptake in Caenorhabditis elegans Using the Transduction Domain of the HIV Trans-Activating Protein

Nematodes are some of the most numerous organisms on Earth. Controlling nematode populations is a major concern in agriculture, because they affect livestock and the roots of plants, causing major damage and economic losses. In a 1994 report, researchers showed that non-blood feeding nematodes were able to ingest immunoglobulins (antibodies) (Murray and Smith, Res Vet Sci 57, 387-9, 1994). This led researchers to conclude that these non-blood feeding nematodes may be susceptible to vaccination. However, it is not known to what extent nematodes can be affected by the host's immunoglobulins.

Nematodes have an advanced digestive system and could easily digest the protein, making it ineffective. Increasing protein uptake may solve this possible problem. Recent studies have shown that fusing an eleven amino acid transduction domain of the trans-activating protein (TAT), from the HIV, to a protein will greatly increase its ability to pass through the cell membrane. (S. R. Schwarze et al., Science, 285, 1569-72, 1999). 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) was inserted into the expression vector pQE30 (Qiagen, Valencia, CA) to generate pQE30GFPuv. Transformed M15 bacteria were used to feed C. elegans for 48-60 hours and ingestion was studied using fluorescent microscopy. The level of GFPuv protein was then quantified in vivo by fluorometric assay. The pQE30GFPuv construct is complete and functional. The construction of pQE30TATGFPuv is currently in progress. Initial results from C. elegans ingestion studies on the pQE30GFPuv construct show the accumulation of GFPuv protein and the retention of its fluorescent properties.

Cynthia Ochs
California State University, Fresno
Department of English
Graduate Student Presenter

Noticing the Bricks in the Wall: Students' Beliefs and Emotions in First Year Composition Classes

The objectives of my qualitative, composition research study are to determine what factors influence some of the beliefs and attitudes of students in both Remedial English and First Year Composition courses, so that I may assess how those beliefs and attitudes may contribute to the success or failure of those students. Since some of the factors which influence these students are the university's own composition programs and methods of teaching, I hope to be able to reassess these as well, based on students' reactions to these factors. In order to collect data, I have conducted a comparative survey of two English A (Remedial) classes and two English 1 (FYC) classes at the California State University, Fresno campus in the Fall of 2001. Second, I conducted several interviews with students in the English 1 class. Third, I interviewed the English 1 teacher. Fourth, I have kept a journal of the English A classes that I have taught for the past two semesters. At this time, I have transcribed two of the interviews, and have recorded the results of my surveys by using open coding and recording percentages. Finally, I have begun to describe the interesting and relevant pictures which are beginning to emerge from this research. Among other things, my research shows that, while remediation does help some students, the stigma of such classes still exists, as well as other factors which show that program changes, such as sending students who do not pass the entrance exam to the mainstream class, and having them take a lab for extra help, make a good deal of sense. Other interesting factors involve the attitudes of some English 1 students toward grammatical correctness and open admissions, and how these factors are connected by prevalent ideologies of American society.

Lori Orosco
California State University, Fresno
Department of Biology
Graduate Student Presenter

Assessing the Effects of Soil Fumigants on Microbial Structure and Diversity by Molecular Analysis in Strawberry Crops

Concern over the continuing destruction of the Earth's ozone and has prompted a ban on the use of the broad-spectrum soil fumigant, methyl bromide. Currently four methyl bromide alternatives (propargyl bromide (3BP), methyl iodide, chloropicrin, and 1,3-dichloropropene) are being tested for fumigant efficacy. Our work here is to evaluate the ecological impact of these fumigants on soil microbial communities by evaluating microbial structure and diversity in two different soil types after fumigation. Soils were collected from six commercial strawberry plots from Watsonville and Oxnard, California. The soils were collected at 1-week, 4- week, and 36-week post fumigation. The pesticides used in this study kill a broad spectrum of organisms. However, specific members of the microbial community are affected individually.

Our hypothesis is that these effects are unique to each fumigant therefore; community diversity after application is unique with each pesticide. To test this hypothesis total soil DNA was subjected to ribosomal amplification followed by restriction enzyme digestion to determine restriction fragment length polymorphism (RFLP). Our findings show DNA analysis indicates:

(1) higher quantities of total DNA in non-fumigated soils opposed fumigated soils.
(2) RFLP analysis shows a greater loss of diversity in bacterial verses fungal communities in non-treated and fumigated soils.
(3) Both of these findings are treatment specific.

Our second hypothesis is that bacteria have evolved metabolic pathways to degrade xenobiotic compounds therefore the biotic degradation of 3BP by a novel soil bacterium can be isolated and evaluated for in vitro degradation of 3BP, leading to the bioremediation of 3BP fumigated soils. Ten putitative propargyl bromide degrades have been isolated using enrichment techniques, and preliminary characterizations put then into the Pseudomonas and Bacillus spp. These findings aid in finding a feasible alternative to methyl bromide replacements.

Tony Pixton, Selahattin Guzel, Chue Vue
California State University, Fresno
Graduate Student Presenter

A Survey of Radon Levels at Fresno State

This project involved determining the concentration of radioactivity produced by Radon all over the Fresno State campus. Radon is a radioactive element, which occurs naturally in the environment in a gaseous state. Radon is almost nine times heavier than air molecules; therefore after it is produced in the ground it comes to the surface and stays around ground level. This can pose a risk of inhaling the radioactive gas. People exposed to high radon levels have an increased risk of developing lung cancer. The radon was measured using a RadTrak detector. These detectors were set at a location for six to twelve weeks. They were then sent to a company that returned the results on the radon levels. The results were then analyzed and included in a report. Twenty-seven detectors were placed in twenty buildings through out campus. The detectors were placed for a time period of seven to eight weeks. The average radon level at the CSUF campus is 1.4 pCi/L with range 0.5pCi/L to 2.8 pCi/L. The recommended levels set by the EPA is 4.0 pCi/L. The measurements made around the Fresno State campus during the spring 2001 semester showed that the Radon levels on our campus are well below the recommended level, suggested by the health department. The process of measurement was simple. This suggests that private individuals could use this process to measure radon levels in their homes, especially if they believe that they reside in poorly ventilated places.

Yara Rivera
San Jose State University
Undergraduate Student Presenter

Cesar Chavez: The Beginning of His Organizing Years With the CSO and Its Members

The picture of Cesar Chavez that most people are familiar with is that of a community organizer. He became famous for the National Farm workers Association, a union he co-founded along with Dolores Huerta. This study sought to find information about the Community Service Organization (CSO) when Cesar was involved with it between the years 1952-1962. This time period was when he transformed from an ordinary Mexican-American citizen living in the bad neighborhood of "Sal Si Puedes" to a passionate community organizer. This research study explains in detail his developmental process and the different people he worked with under the CSO. This was a qualitative exploratory study. People who knew and were involved with Chavez during his involvement with the CSO were contacted and interviewed. Personal papers of Chavez related to his work for the CSO were located in Detroit where analyzing of the papers took place. Various articles about the CSO were found in the "El Excentrico" newspaper, dating back to the specific time period when Chavez was involved. Chavez developed his potential as a community organizer because a community member invited him to do so. He stood firm in his beliefs when he was helping his community, which caused controversy within his community and within the CSO. The majority of the work he did for the CSO was not related to organizing farm workers, all though it was a desire of his even at the time.

Sallie Perez Saiz
California State University, Fresno
Department of English
Undergraduate Student Presenter

Aztec Poetry: Contributions to the Modern Reader

Aztec poetry, a literary body that has significant contributions to the study of ancient literature, will be examined and analyzed to show the purpose that poetry held for Aztec people and how that is pertinent to the modem reader. The analysis will reflect human philosophical, spiritual, and theological thought and questions through the metaphoric poetry "flower and song" that functioned not only as a form of literature, but as a form of education for the ancient Mesoamerican peoples through oral tradition, codices, or book of pictures (hieroglyphs), and song. Furthermore, I will look at how, through the literary form of poetry, the expression of movement, image, and thought intertwined to make a dynamic experience for those in the Aztec society. From this analysis, I will contrast the development of this ancient cultural art form to later developments of poetry by the Aztec people that were influenced by European ideology and Western thought. The analysis of this literature will help to gain a better understanding of a body of literature that has primarily been ignored in the Western tradition of the study of literatures, but would contribute and is relevant to the modem reader and humankind to better understand the search for truths surrounding the experience of humanity.

Letitia Sanchez, Walter Oechel,
James Diffendorfer, Glen Kinoshita, John Chalekian
San Diego State University
Undergraduate Student Presenter

A Method for Monitoring Soil Respiration in Alaska's Arctic Tundra Ecosystem

Barrow, AK's tundra ecosystem is easily disturbed by changes in climate. Monitoring seasonal changes in climate and atmospheric carbon concentrations may elicit a response to changing temperatures. The arctic contains vast carbon reserves that could impact changes in atmospheric CO2 concentration. Measuring rates of soil respiration will invoke a better understanding of the contribution of underground biomass to atmospheric carbon pools. A soil respiration chamber was utilized to measure soil respiration. Areas dominated by wet sedge or dry heath were chosen so that differences in soil respiration based on soil moisture could be measured. Temperature and soil respiration measurements were taken approximately two or three times a week near solar noon over a 5-week period. Control plots were left with the vegetation intact while treatment plots had the vegetation carefully removed so that respiration rates due solely to underground processes could be measured. Results from this study, indicated that the removal of vegetation reduced soil respiration by approximately 80% compared to control sites. Soil moisture did not have a significant effect on soil respiration between dry and wet sites. This is probably due to the lack of control imposed by the experimental design. Also, temperature did show a relationship with soil respiration. Previous studies have also indicated a strong temperature control on soil respiration. In order to discover the processes driving soil respiration, and to allow more precise and accurate measurements, individual components of this process should be studied while controlling for all other variables.

Ray Michael Sanchez
California State University, Fresno
Department of History
Graduate Student Presenter

Obtaining and Maintaining Salvation in Galatians

How Paul interprets the concepts of covenant and law are of utmost importance to an ancient historian, Biblical scholar, proponent of higher criticism, Jew, Christian, and in fact, every person. The history of human society and progress would not be unfairly labeled as the history of interpretation: how a 'Christian world' interprets God's dealing with itself (viz., the Bible) has untold ramifications.

To understand how Paul understood covenant and law is to clarify Paul's view of 'salvation'. Covenant and law were truths that conveyed to the Jews their unique relationship with YHWH; Paul reinterpreted this relationship (from a Jewish soteriological framework) and set out in his letters, as the occasion gave rive, to articulate what 'salvation' was, how one obtains it , and how one keeps it –in light of the "Christ-event".

Paul articulates the purpose of the Old Covenant in order to defend his position on the New Covenant (Gal. 31-4.31). In Paul's view, the promises made to Abraham and the nation of Israel after him came to fruition in Jesus Christ – salvation was by grace just as it had been for Israel (covenant). However, Torah adherence no longer maintained ones standing with YHWH in the covenant; rather, it is by "faith in Jesus Christ" (Gal. 2.17). To Paul, this faith did not simply maintain the Christian's standing with YHWH as obedience to the Torah had, for both paradigms would have still reflected confidence in the 'flesh'. Instead, this "faith in Jesus Christ" resulted in the reception of the 'Spirit', which signified true faith in the victory of Christ on the cross and through his resurrection. It was because of the reception of the 'Spirit' then, that Paul could say, "So you are no longer a slave, but a child; and if a child, then a heir through God (Gal. 4.7).

Matthew J. Sharps, Ph.D.
Terri L. Barber, Heather Stahl,
Amy M. Boothby-Villegas
California State University, Fresno
Department of Psychology

Eyewitness Identification of Forensically Relevant Inanimate Objects: Firearms

Although much is known about eyewitness identification of faces in forensic contexts, little or nothing is known about the processes involved in the identification of weapons. Such identifications are often central to criminal investigations and court proceedings. The present experiments addressed this issue. Since it is very difficult to simulate actual crime situations realistically, the goal here was to establish the degree to which weapon identification under *ideal* conditions would be achieved, with the knowledge that such identifications would be worse under field conditions.

Photographic slides of accurate models of pistols and assault weapons were made for presentation in the types of "six pack lineups" used for face identification in actual police work. "Target" weapons were presented for five seconds, in profile, under good lighting conditions, following which respondents were asked to pick the weapons they'd seen from sets of six slides of similar firearms. Respondents were also queried as to their familiarity with weapons.

As expected, recognition memory for weapons was quite poor, even under these idealized conditions; memory for even relatively distinctive weapons ranged between 35% and 65% accurate on average. As expected, more distinctive weapons (in terms of shape and feature) were recognized more readily than were less distinctive firearms, and systematic differences between the "target" weapon and others in the lineups with greater numbers of features were remembered better than simpler weapons, even by respondents with little familiarity with firearms.

These results show that recognition of weapons even under ideal conditions tends to be relatively poor, especially in view of the importance of correct identifications under real police and courtroom conditions. However at the same time, several factors are indicated which may result in improved weapon identification under specific conditions.

David L. Swofford, Ph.D.
Florida State University
School of Computational Science and Informational Technology

The Coming of Age of Model-Based Methods in Phylogenetic Systematics: Controversies and Challenges

Improved algorithms and increased computational power have produced an explosion in the use of maximum-likelihood and other model-based methods in empirical phylogenetic studies. The increased application of these statistical methods has in turn stimulated renewed challenges from those who advocate cladistic parsimony as the preferred method of phylogenetic analysis. While some of the criticisms are reasonable, others are simply based on misunderstandings or misrepresentations of model-based methods.

In this presentation, I will address some of these criticisms, summarizing recent results from my own work and that of others. I will specifically focus on issues pertaining to the relevance and importance of statistical consistency, the relative efficiency of likelihood versus parsimony methods in "zones" where parsimony is subject to artifactual behavior, and the performance of model-based methods in the face of weak to strong violation of their underlying assumptions.

Cary Tanner, MD,
Vincent Pelligrini, MD, Marlene Smith, R.N.
The Musculoskeletal Outcome Center of
Kaweah Delta Health Care District
and University of Maryland

The Morbidity and Mortality of Simultaneous Bilateral, Staged Bilateral, and Unilateral Total Knee Replacement

Factors associated with the morbidity and mortality of patients undergoing total knee arthroplasty (TKA) were studied. The patients were divided into those undergoing simultaneous bilateral TKA, staged bilateral TKA, and unilateral TKA. Outcome data was obtained for 479 consecutive patients who underwent 618 procedures from 1998 to 2001. 228 patients were studies retrospectively and 251 were studied prospectively. 114 patients underwent simultaneous bilateral TKA, 25 patients underwent staged bilateral TKA, and 340 patients underwent unilateral TKA. 8 surgeons at a single center performed all of the procedures. Factors that were correlated with outcome were age, sex, type of anesthesia, number and type of medical comorbidities, the acute and chronic post-op period, the individual surgeon's experience with TKA, and the costs of the procedures, including costs associated with the complications in each group. Complications were stratified according to severity. The follow up time period was divided into an acute and chronic post-operative period. 100% follow up was available for the acute post op period, and one year follow up data was available for 78 % of the patients in the chronic period. No significant differences in the rates of complications between any of the TKA groups were identified in patients with less than three preoperative medical comorbidities. However, in patients with three or more preoperative medical comorbidities, those undergoing simultaneous bilateral TKA were more likely to sustain all complications with long term consequences compared to those undergoing unilateral TKA. The rates of severe complications and death remained significantly greater in patients undergoing simultaneous bilateral TKA, even when compared to the cumulative risk of undergoing two unilateral total knee replacements (to achieve the same bilateral TKA endpoint). In conclusion, simultaneous bilateral TKA is recommended in patients with less than three (3) preoperative medical comorbidities.

Victor M. Torres, Ph.D., MPH
California State University, Fresno
Helda Pinzon-Perez, Ph.D., CHES
Vickie Krenz, Ph.D., MSPH
Sean Schafer, M.D.

Factors Influencing Cervical Cancer Screening Among Rural Latino Women in the Central California Valley

Cervical cancer is the third leading cancer diagnosed in Latina women. Previous studies have indicated that this group of women is 7.3 times more likely to get cervical cancer than Caucasian women. In the Central San Joaquin Valley, the incidence of cervical cancer amongst Hispanic women is the highest of all ethnic groups and is more than double that of non-Hispanic whites (17.5 per 100,000 vs. 8.5 per 100,000). What factors are influencing the health-making decision of Latinas in the Central Valley with regards to the importance and the use of Pap smear exams? Is this underutilization due to the cultural incompatibility between Mexican women's own ethnomedical model and biomedicine?

Participants were selected among four different health clinics: Selma, Parlier, Firebaugh, and Fresno. All the participants were enrolled in a managed MediCal system (e.g., Health Net, Blue Cross). By interviewing women enrolled in the state sponsored MediCal managed care system, this collaborative research project sought to control for "access," i.e., the lack access to health care services, as a reason for the inadequate use of Pap smear exams. Of the 712 patients identified, 360 medical charts were located. Following a systematic procedure, these women were contacted and asked to participate in an in-depth, face-to-face interview with a female interviewer. This paper presents the findings of the pilot study.

The pilot interviews identified key factors that influenced this group of women's attitude toward the Pap smear itself, as well as toward the managed health care system in general. These factors include 1) quality of care issues; 2) obstacles to care in general; 3) obstacles to getting a Pap smear; and 4) factors that facilitate getting a Pap smear. The findings indicate that cultural factors play a lesser role in the decision to get a Pap smear exam.

Gene R. Urrutia
California State University, Fresno
Graduate Student Presenter

The Evolving Nature of Narrative in Non-Fiction Prose

The aim of the study is to support the claim that the concept of narrative is not limited but unlimited in its nature. The genre of Non-fiction prose is constantly evolving because of several critical elements. One such element is creativity. Through this aspect this study will illustrate how creativity is comparatively analyzed in several works within this genre.

I will employ several comparative analysis techniques in my study. Within these techniques, I will profile, compare and contrast and explain how syntax, tone, style and above all, form are analyzed in quintessential texts of non-fiction. Through these comparative methods readers of this study may observe how human creativity is on a cusp of innovation and seemingly limitless potential through narrative.

Ostensibly, the results of the study are viewed on several different levels. For example, readers of the study may recognize that "form" exhibits a certain notable, distinguishable and inherent quality to itself. It becomes isolated from other works within its genre in various unique ways. Dave Egger's *The Heartbreaking Work of a Staggering Genius* is a good case in point. Egger frequently omits conventions of form. These conventions are what readers are familiar with in the traditional sense of the word. Here, the author successfully challenges narrative status quo. What is now reflected is a transformation of narrative conventions. In essence, through his text he may have committed the equivalency of a literary revolution. The effect of observing and citing Egger's text supports the claim that a particular mode of representation is what makes a work resonate an evolving creative quality. When form is written in an accepted unique capacity, owning essential particular characteristics to itself, then its disposition is what gives it genius status. Egger's work exhibits this. In addition, I will chronicle and show how tone, style and the aforementioned elements, can be found in both historical and present day texts. This will include texts written within the past five years. This will be the result of my study.

Creativity in the narrative of non-fiction is boundless. This partnership may have been formed to ensure and decree a call that only the human species has the passionate desire to make. It can be supported that this evolving uniqueness is represented in non-fiction narrative.

R. Lynn Williams, Ph.D.
Sarah Shepherd,
James E. Casey, Jr.
California State University, Fresno
Department of Agricultural Economics

An Economic Analysis of Alternative Raisin Production Systems

California, the San Joaquin Valley in particular, dominates the $350 million U.S. raisin industry. In order to remain profitable in a global market U.S. raisin producers are developing alternative production systems. The primary aim of these alternative systems is to lower production costs, increase revenue, and lower the producer's exposure to risk. Production costs are lowered, primarily, through a transfer of investment from temporary labor to capital investment in machinery. Revenues generated by these new systems are increased due to increased crop yields. Finally, exposure to weather and labor availability risk are reduced under these alternatives.

This study evaluates four production systems currently being employed in the San Joaquin Valley. They include a traditional dried on the ground system, two overhead trellising systems (one developed by Simpson Vineyards and the other developed by Pitts Carbonics), and a hybrid system that incorporates both mechanized harvesting techniques and dried on the ground practices. These systems were analyzed via capital budgeting. This process allowed us to evaluate the amount of time necessary to repay the investment required for each system, the net present value of the alternatives, and to calculate two rate of return measures. One rate of return measure allows for reinvestment while the other precludes reinvestment. Additionally, breakeven analysis was performed on both prices received for delivered raisins and yields.

Results indicate that the Simpson and Pitts systems are comparable in payback time, and rate of return measures. Each would require less than five years to payback initial investment capital and have rates of return, assuming reinvestment at five percent, in excess of ten percent. The dried on the ground and Rocca systems require over ten years to payback the initial investment and have rates of return just over two percent.

Kimberly L. Williams
UC/CSU Joint Doctoral Program in Educational Leadership

Accountability and Professional Prerogative: The Impact of High Stakes Testing on Teacher Agency

Reform policies that have gained prominence in recent years tend to rely almost exclusively on results of standardized tests to evaluate student progress, thus bypassing teacher authority as a source of diagnosis. In California, high stakes testing is the cornerstone of accountability legislation that uses state mandates to influence the core technologies of schooling— matters of curriculum and instruction— which are most central to the teacher's role in education. The purpose of this study was to investigate the extent to which teachers utilize professional agency—the prerogative to exercise authority over pedagogical decisions—within an environment of high stakes accountability. This proposition was based on emerging theory from studies by McNeil (2000), McNeil and Valenzuela (2000), Sloan (2000), Smith (1991) Stephens et al (1995), and Valencia and Pearson (1986) that examined the impact of high stakes testing on teacher practice.

A multiple case study was conducted with a purposeful sample of ten teachers from a large urban school district in Central California. Data collection included semi structured interviews, observations of mathematics instruction, and a review of school site plans and legislative documents. Cross case comparisons were examined through analytic themes of accountability, agency, and theoretical orientation. Findings indicated that there was a cultural disposition toward compliance to statutorily mandated policy elements which were external to the core contexts of the classroom. Focus on external accountability diverted attention away from the proximate needs of the technical core of schooling. Compliance to accountability was a function of mitigating cultural and philosophical influences—cognitive bartering that occurs when negotiating perceived inequities between external, cultural demands and internal, philosophical commitments. Compliance acted as a survival strategy, a way to mediate incongruities between the demands of accountability and the tenets of pedagogical beliefs.

Eva Yee Wah Wong
California State University, Fresno
Graduate Student Presenter

A Survey of International Students' Perceptions of Ethnoviolence

This study addressed the problems that selected international students have regarding their perceptions of ethnoviolence at a U.S. university. Specifically, answers were sought to the following questions: 1) Do international students experience ethnoviolence on this campus? 2) Do international students' perceptions of ethnoviolence differ by ethnic groups? 3) Do international students' perceptions of ethnoviolence differ by gender? Questionnaires were mailed to the entire population of international students (N=658). A total of 165 (25%) students of the international student population completed the survey, which also asked the students to provide suggestions for improving the campus climate and intergroup relations for international students. Though, study results show that international students do experience ethnoviolence on this campus, students also felt that the general atmosphere for international students was "generally accepting."

POSTER PRESENTATION ABSTRACTS

(IN NUMERICAL ORDER BY POSTER BOARD NUMBER)

Janet Blea
Don Freed, Ph.D.
California State University, Fresno
Department of Communicative Disorders and Deaf Studies
Graduate Student Presenter
Poster Board No.1

The Influence of Olfactory Stimulation on the Verbal Labeling Abilities of Adults With Aphasia

This study investigated the influence of olfactory stimulation (smell) on the verbal naming abilities of adults with aphasia. Aphasia is a language impairment resulting from a left hemisphere brain injury. The study used 2 participants with aphasia in a single-subject, ABAB withdrawal design. The stimuli consisted of colored photographs of common items the participants were unable to name, and small opaque canisters containing samples of an item's corresponding odor. During the A phases of the study, the participants were requested to name the pictured stimuli only. During the B phases, the participants were requested to name the pictured stimuli while simultaneously smelling the corresponding odorous substance. The results demonstrated that the introduction of olfactory stimulation had no influence on the naming accuracy of both participants.

Michael Henrickson, MD
Division of Rheumatology,
Children's Hospital Central California
Poster Board No. 2

The Prevalence of Neuropsychiatric Lupus Erythematosus in a Pediatric Population Using the 1999 ACR Case Definitions

Introduction/Objectives: The neuropsychiatric systemic lupus erythematosus (NP-SLE) syndromes of the central, peripheral and autonomic nervous system observed in pediatric patients are infrequently reviewed. Aside from infection, NP-SLE is the second greatest cause of both morbidity and mortality in SLE. Literature review of the 7 largest pediatric NP-SLE studies from 1977-00 reveals a mean prevalence of 35% (N=140 of 397 total SLE patients), with a range of 23-75%. NP-SLE remains challenging to diagnose definitively because of the wide variety of neurologic manifestations and confounding disorders. No prior pediatric study has applied the1999 American College of Rheumatology (ACR) case definitions for NP-SLE syndromes. This study employs these 19 case definitions and reviews the NP prevalence in a pediatric SLE cohort of 61 patients, enrolled over a 5-year period between 1/95-1/00 at our institution.

Methods: The method used was retrospective chart review. The NP-SLE cohort has these characteristics. All patients met ACR criteria for SLE and had SLE onset at age 18 years or younger. Gender distribution was 27 females and 9 males (3:1); NP-SLE began at a range 4-20 years of age. Average NP-SLE vs. non-NP-SLE follow-up duration was 2.7 vs. 2.1 years (p=0.09); loss to follow-up was 11% vs.16% (p=0.86), including one death in each group.

Results: Using the new ACR case definitions, we identified 36 NP-SLE patients in our cohort of 61, providing a prevalence of 59%. Central NP-SLE syndromes included aseptic meningitis (3%), cerebrovascular disease (12%), headache (44%), movement disorder (6%), myelopathy (6%), seizures (8%), anxiety disorder (8%), cognitive dysfunction (53%), mood disorder (42%), and psychosis (14%). Peripheral and autonomic NP-SLE syndromes included mononeuropathy (3%) and autonomic disorder (3%). No other central or peripheral syndromes were noted. Cognitive dysfunction, psychosis, and mood and anxiety disorders affected 69% of our NP-SLE cohort.

Conclusions: This study's pediatric NP-SLE prevalence (59%) is similar to the average adult prevalence (~50%), but much higher than the pediatric literature average (35%). The prevalence of cognitive impairment and psychiatric syndromes is also elevated in our NP cohort, serving as a significant source of morbidity in pediatric SLE during the important neuro- developmental years.

Marcia L. Hyde
California State University, Fresno
Department of Psychology
Graduate Student Presenter
Poster Board No. 3

Effects of Informational and Controlling Rewards on Altruism

This study examined the effects of positive informational and controlling rewards on the altruistic act of charity. Much research on the topic of rewards demonstrates that controlling rewards (such as rewards that are contingent upon participation in an activity or offered conditionally upon completion of a task) can inhibit motivation for the rewarded activity while positive informational rewards (rewards that represent positive feedback to an individual regarding the competency of his or her performance) can increase motivation for the rewarded activity. This research was reviewed briefly along with two possible explanations for the data: Cognitive Evaluation Theory and Self-perception Theory. The hypothesis was that the detrimental effects of controlling rewards and the beneficial effects of positive informational rewards would generalize to the realm of altruism.

Second graders were randomly assigned to two groups, a controlling reward group and a positive informational reward group and they were then rewarded for giving to a charity accordingly. A week later the children were given another opportunity to give and the money collected was compared and statistically analyzed to see if a significant difference existed between the two groups. As expected, differences between the two groups emerged. Needless to say this is an important topic worthy of more research. An understanding of the various types of rewards and how they interact with a person's intrinsic motivation is essential for anyone who employs rewards on a regular basis, whether it be for something relatively simple, such as encouraging task engagement, or for something more significant, such as helping children to develop a moral character.

Chris Louie, Jose Sy, Ph.D.
California State University, Fresno
Department of Chemistry
Graduate Student Presenter
Poster Board No. 4

Heavy Metal Analysis of Herbal Supplements

Over-the-counter herbal supplements have become very popular in our society as a way to improve our health. Throughout the world, billions of dollars are spent every year on these herbal remedies. Even with such a high demand, there are no governmental regulations or standards that are enforced upon this market. Due to the significant health risks associated with some heavy metals, over-the-counter herbal supplements were analyzed for their heavy metal content. The investigation focal point was on the quantitation of Lead, Mercury, Copper, Zinc, Cadmium, Chromium and Cobalt in several popular supplements. Extraction of the heavy metals in question was attempted from products containing one of the following plant extracts: Gingko Biloba, Echinacea, Korean Ginseng, Valerian, Kava Kava or Black Cohosh.

The samples, in capsule or tablet form, were first digested with hot nitric acid and any inert solids were removal by filtration. Heavy metals in samples were analyzed by Flame Atomic Absorption Spectroscopy (FAAS). Of the 21 products analyzed all apparently contained allowable levels for Copper, Zinc, Chromium, Cadmium and Cobalt. Significant concentrations of Lead were found in 9 of the 21 products. Lead levels ranged from 3 to 25 ug per pill.

Although the Permitted Total Tolerable Intake Level (PTTIL) is slightly higher than concentrations of Lead found, it is strongly suggested by regulatory agencies that no Lead be present in food commodities. More troubling, of the products tested, 6 had Mercury levels several folds higher than the 30 ug Total Daily Intake (TDI) level permitted by government agencies. Based on the findings of this study, it is clearly evident that some form of regulation or set of standards be employed to safeguard the consumer from the risk of heavy metal poisoning.

F.A. Ringwald, D.K. Ancalade
California State University, Fresno
Department of Physics
Undergraduate Student Presenter
Poster Board No. 5

Composite-Spectrum and Related Stars That Are Candidate Detached Post-Common-Envelope Binaries

We present a star catalog that we plan to use as the target list for the proposed university observatory near Shaver Lake. This compilation from the literature lists composite-spectrum stars, known or suspected to have hot subdwarfs, white dwarfs, or otherwise evolved components, with cooler companions. Included are probably similar systems in which the companions have been detected only indirectly, e.g., in close binary planetary nebula nuclei with strong irradiation variations. Most of the star systems are poorly known. Orbital periods have been measured for only 54 of the 342 binary systems, including 7 of 22 unresolved double degenerates. There are also 3 known or suspected triples. This compilation may therefore be useful for finding close binaries that have passed through a phase of common envelope evolution, in which a star engulfs a close companion. These are sometimes called precataclysmic binaries, although many will not become cataclysmic variables within a Hubble time (Ritter 1986).

Manuel Cotta, Alice D. Wright, Ph.D.
California State University, Fresno
Department of Biology
Undergraduate Student Presenter
Poster Board No. 6

Investigating the Fluidity of the 2,4-Dicholorophenoxyacetic Acid Pathway Using Random Mutagenesis

Introduction: 2,4-Dichlorophenoxyacetic Acid (2,4-D) is a widely used, man-made herbicide. Many strains of bacteria have evolved complex pathways to metabolize 2,4-D. In order to gain further knowledge regarding the evolution and regulation of the genes of this pathway, we mutated cells that degrade 2,4-D and plated them on media containing one of six chemicals. For this study we used Ralstonia eutropha JMP 134 transformed with pMM7700. Plasmid pMM7700 contains the strain JMP134 tfdB promoter fused to a lacZ reporter gene.

Methods: Strain JMP134(pMM7700) was mutated with ultra violet light (UV) or ethidium bromide. The samples were then plated on media containing X-gal and one of six carbon sources. With this system, bacterial colonies turn blue when the tfdB promoter is induced.

Results: The UV mutagenesis yielded a few colonies with blue growth. Only two of the carbon sources, chloroacetic acid and toluene, showed growth with blue color (induction). Mutagenesis using ethidium bromide was more successful, 43% plates had bacteria growth. Promoter induction was observed in cells grown on chloroacetic acid, chloroform phenol, and aminobenzoic acid, but did not occur on chlorobenzene or toluene. The blue colonies were streaked for purification and plated on each of the carbon sources, including 2,4-D and nutrient media. All of the mutant strains turned blue on all media. DNA was extracted from the samples that were successfully isolated and is now being analyzed for changes in DNA sequence.

Conclusions: The results indicate that the regulation of the 2,4-D pathway is easier to modulate than we anticipated. Results suggest that the promoter has been mutated to be expressed constitutively. The next step of this project will be to identify specific mutant base pairs by DNA sequencing. This information may help us understand the evolution and regulation of the 2,4-D pathway.

Kevin Moseley
Rick Zechman, Ph.D.
California State University, Fresno
Biology Department
Graduate Student Presenter
Poster Board No. 7

Central Valley Algal Biodiversity Study

The objectives of this study are 1) determine the diversity of algal species found in the Central Valley region of California, and 2) to correlate various water chemistry parameters with species distributions within the region. Planktonic and benthic samples have been collected from diverse habitats and substrates in the Central Valley. Samples were obtained with an 80 micron plankton net and benthic substrate scraping of submerged rocks, vegetation, and sediment. Water chemistry parameters, including temperature, pH, conductivity, and salinity, were obtained with a YSI Model 63 probe. Taxonomic identification and vouchering of species was accomplished with a trinocular compound light microscope, equipped with a Kodak DC290 digital camera.

To date, approximately 4000 digital images have been acquired from 200 collections. The genus level diversity of sampled algal taxa includes Cyanophyta (6 genera identified, many more unidentified), Chlorophyta (14 Charophycean, 12 Chlorophycean, and 4 Ulvophycean genera), Ochrophyta (33 Bacillariophycean, 1 Chrysophycean, 2 Tribophycean, and 1 Synurophycean genera), Rhodophyta (1 genus), Euglenophyta (1 genus), and Pyrrophyta (3 genera). Future efforts will include more frequent sampling of fewer locations to determine seasonal variation in these specific habitats, and species level determination of algal taxa from photographic vouchers. From the results obtained so far, it can be concluded that the Central Valley of California contains a diverse assemblage of algal species, some of which are very widespread and some of which are only found in a few select locations.

E.E. Harding, Ph.D., L.S. Schmidt, J.M. Turner
California State University, Fresno
Biology Department
Graduate Student Presenter
Poster Board No.8

Panmictic Population of Rhizobium Infecting California Native Annual Clovers in Central California

To determine factors influencing the population structures and evolution of Rhizobium, we are examining the structures of Rhizobium populations associated with native legumes growing in situ. Multilocus enzyme electrophoresis was used to analyze alleles of 12 enzymes in 82 Rhizobium strains isolated from four species (Trifolium variegatum, T. tridentatum, T. microcephalum, and T. ciliolatum) of native annual clover in the Sierra Nevada foothills of central California. No electrophoretic type was observed more than once. The mean genetic diversity per locus (D) was 0.61 for the entire population, and ranged from 0.55 to 0.61 for isolates from the various hosts. Genetic differentiation (Rst) was low, ranging from 0.00 to 0.11 among the host species. There was little or no evidence of linkage disequilibrium, with IA values ranging from 0.14 ± 0.16 to 1.29 ± 0.64 among the host species. These data suggest that Rhizobium infecting native annual clover species in central California foothills are diverse, panmictic, and lack host specificity or host preference. These results confirm previous unpublished studies involving phenotypic characterization of these bacteria, but are in conflict with Holland's serological studies indicating host specificity of Rhizobium infecting native clovers. The lack of host preference in the population infecting annual clovers contrasts with our observations of two host-specific populations, each infecting two species among four co-occurring perennial clovers in the high mountain meadows of the Sierra Nevada. We hypothesize that specialization for a particular host is less advantageous in an annual system where that host is less dependably present.

Rachel Kushner, John Chalekian,
Douglas Deutchman, Andy Hector
San Diego State University
Undergraduate Student Presenter
Poster Board No. 9

The Effects of Biodiversity on Soil Moisture in Grasslands

Studies of population ecology indicate that the rate of extinction has increased since humans have inhabited earth (Pimm et.al. 1995). High rates of extinction result in a decrease in the biodiversity of ecosystems (Schwartz 1999). Studies demonstrate that biodiversity of terrestrial communities increase the stability and therefore the productivity of the system. More diverse systems have a greater ability to utilize limiting resources (Naeem et.al. 1995). The relationship between diversity and abiotic factors such as available soil moisture has been neglected. This study performed at the NERC Centre (Imperial College) in Silwood Park UK explored the relationship between the diversity of terrestrial primary producers (including grasses, shrubs, monocots and dicots) and surface soil moisture. Soil moisture was measured across a diversity gradient (1,3,9,27 spp.) for 36 total plots. Within each plot 4 points of measurement were taken and the mean was used for analysis. An ANOVA revealed no significant difference between the 4 means or their degree of deviation from the mean ($F=0.45$; $p=0.72$). A paired t-test indicated that induced drought does have an effect on soil moisture levels throughout the diversity gradient ($t=5.14$; $p<.001$). In conclusion, soil moisture plays a role in the processes that sustain vegetation, but the extent to that role is not so apparent.

Rory Stuart
California State University, Fresno
Department of Biology
Graduate Student Presenter
Poster Board No. 10

Toluene Degradation

This study proposes to examine the toluene metabolic pathway of the bacteria Pseudomonas mendocina. Toluene is an extremely stable and water-soluble toxic aromatic hydrocarbon. The upper pathway for toluene degradation in Pseudomonas mendocina KR1 is able to metabolize the aromatic substrate to the ring cleavage substrate protocatechuate in a five-step process The sequential conversion of toluene to protocatechuate is encoded in three independently regulated units each producing a specific enzyme or enzyme combination The second unit is made up of the pcuAB and pcuC gene sets, these genes encode for PCRE methylhydroxylase and PHBZ dehydrogenase respectively.

The specific objectives of this study are to compare the regulation of the pcu genes to that of other genes and gene products from this pathway. The pcu portion of the toluene pathway from P. mendocina was mobilized from this host into P. aeuriganosa by a PAO Carbenicillinr vector. Chemical transformation was carried out using 0.01 M MgCl2 . The resulting transformants were plated on LB/Cb500 plates. Plasmid DNA was extracted. This isolated DNA will be cloned into pBluescript II SK vectors and placed into E. coli. The genomic DNA was isolated from P. mendocina. A Southern analysis will be conducted to determine any degree of linkage between the pcu genes and other genes from the pathway. We have developed a protocol to examine the toluene-metabolizing pathway of P. mendocina KR1. The transfer of the pathway into E. coli should provide a more manageable basis for sequencing and subcloning. We hope to further the understanding of this particular toluene metabolizing pathway as well as possibly offer some insight into its the evolutionary derived organization. Many complex toluene-degrading pathways have been characterized and further information is always needed in order to place these varying processes in an evolutionarily coherent context.

Steven L. Skelton, Ph.D., Renee Gagnon, Kathryn Stevens, Rita Humphreys, Ph.D., Christine Maul
California State University, Fresno
Department of Communicative Disorders and Deaf Studies
Poster Board No.11

Treatment Efficacy of Intervention in Self-Regulatory Behaviors in Children Language Disorder and Suspected Attention Deficit-Hyperactivity Disorder

Several research studies have established that Attention Deficit-Hyperactivity Disorder (ADHD) frequently presents co-morbidly with a language disorder. Commonly ADHD children, without co-morbid language disorder, are taught self-regulatory behaviors needed for progression to task completion. However, these procedures require extensive use of the children's language skills. The question arises as to whether these intervention procedures can be adapted for use with children presenting ADHD and Language Disorders. To date, experimental research has not addressed intervention specific to children with ADHD and a cooccurring language disorder. Therefore, this study applied an intervention in self-regulatory behaviors to eight participants between six and nine years of age, presenting with language disorder and suspected ADHD. A multiple-baseline across subjects design was used to examine the effectiveness of teaching self-regulatory strategies through role playing activities to improve skills in following directions necessary for task completion.

The results showed that the participants were able to learn the self-regulatory behaviors taught, though differences – depending upon the degree of language impairment– were noted in the number of prompts needed during teaching. The participants were able to apply the correct self-regulatory behaviors to help guide their performance during classroom-based paper and pencil tasks as well as classroom-based social behavioral tasks. The results suggest that self-regulatory behaviors can be taught to this population if the teaching procedures are modified to their language level. Also, these behaviors can positively affect children's progression to task completion.

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Estimation of the Inhomogeneity of the Magnetic Field from NMR (Nuclear Magnetic Resonance) Relaxation Time Measurements

The measurements in a nuclear magnetic resonator are dependent on the homogeneity of the magnetic field; if a sample to be measured is large, then the intensity of the field will differ over the sample--effecting the measurements. While the magnets used in expensive, professional NMR detectors have sophisticated electronics to increase the homogeneity of the magnetic field at its center, small educational NMR devices do not have such luxuries. Therefore, it is useful to measure the inhomogeneity of the static magnetic field.

The measurement of spin-lattice relaxation time (T1) and spin-spin relaxation time (T2) at various positions within the magnetic field is used as a probe of the inhomogeneity of the magnetic field. Here, we used four distinct positions to calculate the inhomogeneity of the magnetic field. Our measurements yielded an inhomogeneity between .9 and 4.7 milligauss. This technique can be used to evaluate the magnetic fields of small tabletop permanent magnets used for nuclear magnetic resonance.

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Propagation and Inoculation of Perennial Native Legumes with Rhizobium for Cross-Inoculation Tests to Determine Host Specificity

To determine factors influencing population structures and evolution of Rhizobium, we are examining two kinds of Rhizobium trifolii infecting four species of native perennial clovers growing sympatrically in Sierra Nevada meadows. In order to determine the level of specificity of the legume-Rhizobium interaction, seedlings of the first trifoliate leaf stage of three of the four species (T. monanthum, T. wormskioldii, T. bolanderi, and T. longipes) were infected with twenty Rhizobium strains. In this cross-inoculation study, clovers were grown from collected seeds in sterile sphagnum moss after scarification in a nitrogen limiting environment, supported with Jensens solution under controlled greenhouse conditions. At sixty days plants were harvested and the above ground wet weight was determined. Plant wet weight was significantly higher in plants that were inoculated from the common Rhizobium phenotype infecting T. monanthum and T. wormskioldii distinct from the Rhizobium that nodulated T. bolanderi as shown in previous field studies.

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Characterization of Cloned Repetitive DNA in Pepper

Pepper (Capsicum sp.) has 2 to 3 times the amount of DNA as other members of the Solanaceae family (potato and tomato) but has the same number of chromosomes (n = 12) and possibly the same number of genes. Our hypothesis is that repetitive DNA is responsible for this large difference in genome size. A random pepper genomic DNA library was constructed by a Sau3AI digest. Cross-hybridization experiments are under way to eliminate duplicates and put in them in families. Reconstruction experiments were done to determine relative copy number of the repeat in pepper. We are also screening the repeats by Southern hybridization on to various species and varieties of pepper, and to tomato, potato and corn, to determine the distribution of the repeats. DNA sequencing was done using the ABI 300 sequencer.

Of the pepper clones tested to date, 40% hybridize to pepper alone. Another 40% hybridize to repetitive DNA in pepper and low copy DNA in tomato. Twenty percent hybridize to repetitive DNA in both pepper and tomato. The reconstruction experiments have shown that the copy number of these repeats range from 8,000 to 15,000 copies per C. annuum. DNA sequencing of the ends of several repeats has not yet yielded useful information for our analyses.

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Seasonality of Birth in Alzheimer's Disease

The purpose of this research was to determine if there is a monthly distribution of births of Alzheimer' disease patients that differs from the monthly distribution of births within the general population to persons of comparable age. The context of this research was in the fact that (1), other medical disorders have a seasonality of birth; (2), that some of the etiological factors suggested for Alzheimer's disease would conceivably produce a seasonality of births; and (3), that the previous research on seasonality of birth in Alzheimer's disease has been inadequate and has produced ambiguous and inconsistent perspectives.

The present study combined previous published data with current data from California Alzheimer's Research Centers, indicating a significant relationship ($p<.01$) between a person's season of birth and later diagnosis of Alzheimer's disease. The monthly distribution of Alzheimer's disease births in California was compared with the monthly distribution of general population births in California from 1906 to 1923. California was chosen because it has an extensive Alzheimer's disease data collection program. The general population distribution was obtained from the California Department of Health Services Office of Health Information and Research vital Statistics Section. The composite of the present findings provide a perspective that is somewhat firmer than that provided by previous researchers. This perspective is one in which Alzheimer's disease patients tend to have been born in the earlier months of the year.

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The Effect of a Comprehensive Exercise Program in Women with Disabilities

Introduction: Results of a recent pilot study indicate that women with mobility-related physical disabilities in the San Joaquin Valley are limited in their options for exercise due to a lack of accessible facilities and inadequate information about appropriate types of exercise. Consequently, most of these women lead a sedentary lifestyle and have limited access to opportunities to participate in a more active lifestyle. The purpose of this study was to examine the effect of a comprehensive activity and education program on lifestyle, perceived health, and quality of life during a four-month period in women with mobility-related disabilities.

Methods: Thirteen adult women with mobility-related disabilities with an average age of 48.5 years completed a six-week comprehensive exercise program. Subjects' anthropometric measurements were obtained and subjects completed questionnaires regarding their demographic information, quality of life, exercise practices, general health, and health awareness. Data was collected before, immediately following, and eight-weeks post intervention.

Results: Results indicate that initially 50% of the subjects reported that they did not know how to properly exercise and 50% reported health concerns preventing them from exercising. Following the 6-week intervention 100% of the subjects reported knowledge of how to properly exercise including what type of exercise to do, 20% continued to report health concerns limiting their ability to exercise, and 100% felt that exercise was beneficial. Strong trends were evident indicating improved quality of life following the intervention.

Conclusions: Findings from this study confirm that women with disabilities are faced with multiple challenges interfering with participation in regular exercise and indicate that women can successfully participate in a community-based exercise program. The results of this study demonstrate several beneficial outcomes of an active lifestyle for women with disabilities.

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Diurnal and Seasonal Ammonia Emissions from Dairy Effluent

California is the number one dairy state, producing 26 billion pounds of milk and cheese in 1999. While the growth of this industry results in significant economic returns for the region, there is the issue of effective manure management. In dairy operations, manure is commonly handled as an effluent stream of liquid or slurry manure by means of a hydraulic flushing - lagoon storage - irrigation system. Major problems associated with the manure management are high solids and nutrient contents of the effluent stream, and gas production during the decomposition of manure in storage. As a result the health, environmental and economic concerns, there is a need to quantify the ammonia (NH_3) emissions at dairies. In this study, temporal ammonia emissions from a dairy lagoon and a pasture fertilized with liquid dairy manure were investigated using an active sampling technique. At 1m above the lagoon, NH_3 fluxes decreased from 160 $ugNH_3m^{-2}s^{-1}$ when the pH of the effluent was 7.5 to 85 $ugNH_3m^{-2}s^{-1}$ when the pH was lowered to 6.3. Diurnal and nocturnal changes in NH_3 fluxes were due to primarily to differences in wind speeds. In August NH_3 fluxes ranged from 120 to 70 $ugNH_3m^{-2}s^{-1}$, and from 40 to 32 $ugNH_3m^{-2}s^{-1}$ in December, for dairy effluent applied to a sheep pasture. The applicability of the sampling technique for quantifying NH3 emissions at dairies is also discussed in the poster.

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Ammonia Emissions from Cotton during Fertilizer Application and Defoliation

In 1999, cotton production was ranked third among California's top 20 agricultural exports and accounted for an export value of $439 million. Despite a forty one percent decline in export value from 1998 due mainly to production declines and unstable foreign exchange rates, cotton continues to be a leading export commodity and there is ongoing effort to improve nitrogen (N) use efficiency in cotton production. In addition to the economic losses represented by the amount of applied N that is not available for plant uptake, ammonia (NH_3) emissions from crop production are major health and environmental concerns.

In this poster, we present some of our ongoing research aimed at defining an annual N budget for cotton. The major objective was to quantify NH_3 emissions from two cotton crops before, during and after N application and irrigation, as well as to determine any NH_3 emissions during defoliation of another cotton crop. Active denuder samplers, with citric acid traps, were used to monitor NH_3 concentrations both within and above the crop canopies. Standard mass balance micrometeorological techniques were used to estimate the integrated NH_3 flux by combining measurements of wind speed and NH_3 air sample concentrations from height-dependent sampling locations mounted on the portable mast towers. For cotton grown on an Oxalis silty clay with pH of 8.5, to which N was applied as anhydrous NH_3 injected into soil to a depth of approximately 15 cm followed by flood irrigation, there was a 5.6 kg N ha^{-1} loss for every 100 kg N ha^{-1}applied. For cotton grown on a Lethent silty clay with a lower pH of 7.8, subjected to similar N fertilization and irrigation, the NH_3 emission factor was only 3.9%. In the case of the cotton defoliation measurements, on Panoche loam with pH of 7.9, NH_3 emissions reduced by 75% from the day after defoliant application to the time there was 65% crop defoliation. Our findings indicate that N losses through volatilization during **both** crop growth and defoliation are significant and should not be ignored in calculating annual N budgets for cotton.

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Ammonia Emission Factors from Monitoring of Fertilizer Applications to Various California Crops

This study, supported by the California Air Resources Board, was commissioned to develop a statewide emissions inventory of ammonia volatilization from applied fertilizers. A series of 19 fertilizer applications to commercial crops were sampled continuously for 7 to 10 days using an active denuder method similar to that utilized in urban air quality studies. Denuders and anemometers were co-located 1, 2, 5, 10 and 20 meters above the soil surface on a portable tower. Volatile NH_3 losses from fertilizer applications ranged from 0.1 to 0.7 g NH_3-Nm^{-2} (approximately 1 to 6 lb. NH_3-N per acre). Estimated emission factors ranged from less than 0.1% to 6.6%. Higher emission factors occurred on soils with pH values greater than 8.0, and for application methods that left the fertilizer at the soil surface. Emission factors from the field-sampling phase of the study were used to develop a database for the entire state. Crop acreages from overhead images were combined with fertilizer application rates and methods estimated for various regions of the state. Volatile NH_3 emissions from fertilizer applications were 12 X 10^6 kg NH_3 annually in an estimated statewide emission of nearly 37 x 10^6 kg NH_3.

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Assessing Potential Canal Seepage with Electromagnetic Technique

Canal seepage is a serious water management problem in California's San Joaquin Valley. The goal of this study was to apply the EM technology to detect potential seepage along a canal of central California. The research was conducted at the Lost Hills Water District, CA in 2001 when the canal was open (August) and then closed (October). A Mobile Conductivity Assessment (MCA) System was developed comprising an EM-31 sensor, a GPS receiver, a computer, and a soil sampler, mounted on a truck. Data calibration and analyses were performed with ESAP-95 package following soil sampling (0-8 ft). For both surveys, the maps indicated that soil water content was lowest near the surface (0-3 ft) with values ranging from 20-30%. The 6-8 ft profile had the highest water content due to the presence of water table. The water content percentages at 3-8 ft were lower in October. Greater water content could be indicative of potential seepage. Soil EC was lowest at 6-8 ft depth (< 6 dS/m). In August, the highest EC values were observed on the eastern side of the canal. Average EC increased after closing the canal. For all depths, water content and EC were greater in the canal mid-section. Percent soil clay content increased with depth and ranged from 10-50%. The overall results of such study and contour maps can be useful in improving water management and conservation strategies along irrigation canals.

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Nonlinear Interaction of Fluid-Structures Systems

An overview of the analysis procedure use to model nonlinear fluid-structures interaction will be presented. The influence of vortex shedding when the fluid-structure system is simultaneously subject to moving water and axial loading is considered. This condition occurs on long-span highway bridges that traverse waterway systems (streams or rivers). In particular, the basic Iwan-Blevins model for nuclear reactor cores is extended to include the axial force influence for elastic structural elements. In the developed analysis model it is assumed that both the axial force and the water velocity are constant.

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A Risk Management Project to Compare Interventions to Prevent Back Injury to Nurses

The VA-wide deployment of a back injury prevention program for nurses is a national Veteran Administration study being conducted from VISN 8 in Florida. It is a project to compare back injuries among nursing staff in high-risk areas that are exposed to three different interventions. VISN 8 nursing staff will receive intense training and special lifting equipment designed to support a "no-lift" policy in care of patients in Spinal Cord Injury Units (SCI) and Geriatric and Extended Care Units (GEC). VISN 21 (which includes northern California VA facilities, Reno, Nevada, and Fresno) nursing staff will receive educational interventions beyond the current offerings provided at orientation and at annual review time that focus on body mechanics and safe patient handling. VISN 17 (in Texas) will be the control site; nothing different will be done in that VISN for prevention of back injuries. Only the staff of high-risk areas (SCI Units and GEC Units) is being asked to participate. Data collection will focus on the number and severity of on-the-job injuries, job satisfaction and adherence to policy. This study will last two years.

Locally, forty-two staff (98% of the staffing roster) has agreed to participate in this important study and have signed Informed Consent Documents, participated in the satisfaction survey completion and are willing to report any injuries sustained on the job for analysis. Intensive back injury prevention training will commence in February. The training will be done in small groups with emphasis on body mechanics and safe patient handling, incorporating a practicum experience to aid in hands-on practice.

The potential impact of such a study on preventing injury to nurses in high-risk patient care areas has important ramifications to the practice of nursing. While the study is not yet completed, we hope to share at the conference the educational component of the study, the intervention designated for VISN 21 staff. It is this education that we hope makes a significant contribution to the prevention of injuries to our most valuable asset: nursing staff.

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Women's Work and Family Lives: Cohort Differences and Family Patterns

We use data from the Intergenerational Studies (IGS), three longitudinal studies of normal human development begun in 1928, to explore cohort differences and family patterns in women's work and family lives. In 1996, original study members, as well as their spouses and their children, responded to a set of mailed questionnaires. Here we focus on women only: 141 generation-1 women (G1), born in approximately 1928 (either original study members or their spouses), and 103 generation-2 women (G2), born in approximately 1954 (children of original study members). All women completed a yearly "age line," beginning at age 16 through to their current age, indicating when they completed their education, when they married (if they did), when they had children (if they did), and when they worked part-time or full-time (if they did). If women completed their education, then married, then had children, and worked either not at all or only part-time until their children were at least five years old, we labeled them "traditional." Otherwise, we labeled them "untraditional." As would be expected, G1 women were significantly less educated, married significantly earlier, had their first child significantly younger, and had significantly more children than G2 women. Approximately 70% of G1 women and only 31% of G2 women were "traditional." Interestingly, when the subset of those G1 women with daughters in the G2 sample were examined (N=44 mothers and N=61 daughters), it was found that a mother's traditionality had no bearing upon her daughter's traditionality (χ^2(1df)=0.21, p>.05). A case study of a nontraditional daughter with a traditional mother (the most common pattern, N=29; 48%), nontraditional daughter with a nontraditional mother (N=13; 21%), traditional daughter with a traditional mother (N=12; 20%), and traditional daughter with a nontraditional mother (N=7; 11%) will be given, illustrating the many patterns of work and family lives mothers and daughters may experience.

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Genetics of Host Resistance to *Phytophthora* Root Rot in Pepper*(Capsicum annum)*

Phytophthora capsici is a fungus that causes root rot and foliar blight in pepper. Sources of resistance have been reported in some pepper accessions. Reports indicate that resistance to this fungus is under the control of one to several genes. The genetics of resistance has yet to be fully understood to facilitate the development of resistant commercial varieties.

Experiments are ongoing to elucidate the inheritance of resistance and to detect the locations of the resistance genes in the genome of pepper. A total of 29 *P. capsici* isolates collected from different sources are available for the screening of 11 pepper lines of which six have been used so far. One month after the pepper seeds were planted, each seedling was inoculated with 5 ml of a *Phytophthora* zoospore solution at a concentration of 2 x 10^3 spores per ml. Two months after inoculation, the plants were evaluated for symptoms and severity of disease. The plants were scored on a scale of 0 to 5; with 0 being fully resistant (no disease symptoms) and 5 being fully susceptible (dead).

Six of the eleven pepper lines (Bell POC, Cayenne 192, Jupiter, Joe E Parker, Psp 11, and Cayenne 194) showed strong susceptibility (67.78 - 100% susceptibility) to each of the *Phytophthora* isolate. Five of the lines (Cayenne 193, Fidel, Paladin, Criollo de Morelos, and PI201234) showed resistance (0.00 - 27.67% susceptibility).

Crosses have been made between susceptible and resistant lines for inheritance studies and molecular analysis of resistance gene(s). DNA has been isolated from segregating populations of two of these crosses and efforts are ongoing with RFLP, RAPD and AFLP analyses for the development of pepper linkage maps. Once the maps are constructed, the location of the resistance gene(s) will be determined. This will enhance marker-assisted breeding of pepper varieties that are resistant to root rot.