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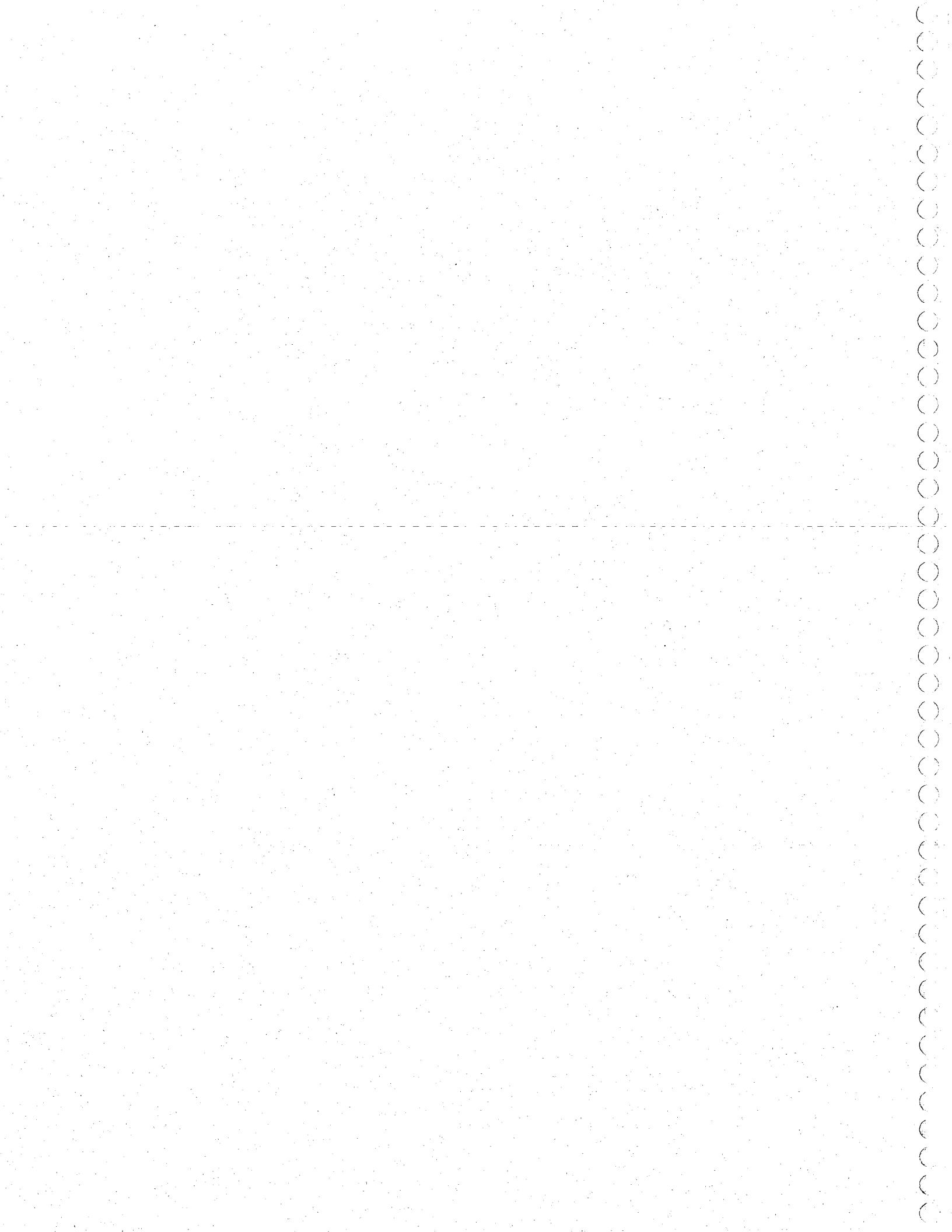
**20<sup>TH</sup> ANNUAL  
CENTRAL  
CALIFORNIA  
RESEARCH  
SYMPOSIUM**

**PROCEEDINGS  
OF THE  
1999 SYMPOSIUM**

**Convened on  
Friday, April 16, 1999  
at the  
University Business Center  
California State University, Fresno**

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## **TWENTIETH ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM**

### **PROCEEDINGS**

#### *Sponsoring Institutions*

**California State University, Fresno**  
*University Grants and Research Office*

**University of California, San Francisco**  
*Fresno-Central San Joaquin Valley  
Medical Education Program*

**California School of Professional Psychology**

**Fresno City College**

**Fresno County Health Services Agency**

**United States Department of Agriculture**  
*Water Management & Horticulture Research Laboratories*

**Valley Children's Hospital**  
*Research Projects and Administration*

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

**California State University, Fresno**

**April 16, 1999**

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## PREFACE

Welcome to the *20th 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 Valley Medical Education Foundation* has provided two cash awards for the best symposium presentation by a student--one for an undergraduate student and one for a graduate student. *California School of Professional Psychology* has provided one cash award for the best symposium presentation by a doctoral student. *Valley Children's Hospital* has provided a cash award for the best poster presentation. The *Grants and Research Office of California State University, Fresno* has planned and administered the symposium in cooperation with these institutions.

Presenters and guests are invited to a social hour following the student awards, which will be held in the University Business Center Gallery.

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

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## PLANNING COMMITTEE

### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO FRESNO MEDICAL EDUCATION PROGRAM

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

H. John Blossom, M.D.  
Donna Hudson, Ph.D.  
Kent Yamaguchi, M.D.

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

Andrew Alvarado, Ph.D.  
Ethelynda Harding, Ph.D.  
Mark Mayse, Ph.D.  
Albert Valencia, Ph.D.  
Robert Ware, Ph.D.

### CALIFORNIA SCHOOL OF PROFESSIONAL PSYCHOLOGY Merle Canfield, Ph.D.

### FRESNO CITY COLLEGE Edward Lindley, Ph.D.

### FRESNO COUNTY HEALTH SERVICES AGENCY Bruce Fujikawa, Dr. PH David Hadden, M.D.

### U.S. DEPARTMENT OF AGRICULTURE WATER MANAGEMENT AND HORTICULTURE RESEARCH LABORATORIES Cynthia Eayre, Ph.D. Joseph Smilanick, Ph.D.

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

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

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CALIFORNIA  
STATE  
UNIVERSITY,  
FRESNO

April 16, 1999

### **MESSAGE TO ALL RESEARCH SYMPOSIUM PARTICIPANTS**

California State University, Fresno is pleased to serve as the host campus for the *Twentieth 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



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@ucsfsfresno.edu](mailto:dean@ucsfsfresno.edu)

## WELCOME

### TWENTIETH ANNUAL CENTRAL CALIFORNIA RESEARCH SYMPOSIUM PARTICIPANTS

I welcome all to the Twentieth Annual Central California Research Symposium. The quality of research activities are testimony to the strength of our many Central Valley academic institutions. The strong contributions of this years symposium contributors will make this year's event an especially exciting one.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Blossom'.

H. John Blossom, M.D.  
Associate Dean





**CSPP**

**Mary Beth Kenkel, Ph.D.**  
Chancellor

March 11, 1999

Dear Symposium Participants:

The Fresno campus of the California School of Professional Psychology (CSPP) is honored to be a sponsor of the 20th Annual Central California Research Symposium.

Important research is being conducted at the higher educational institutions and hospitals in Central California. Additionally, in these settings, the next generation of researchers is being trained.

By featuring the work of Central California researchers from diverse fields, the Symposium provides an exciting view of the broad expanse of research taking place in the Central Valley. CSPP looks forward to presenting some of our faculty's and students' research studies and to learning about the work of our colleagues in other settings.

We wish all participants an informative and stimulating day.

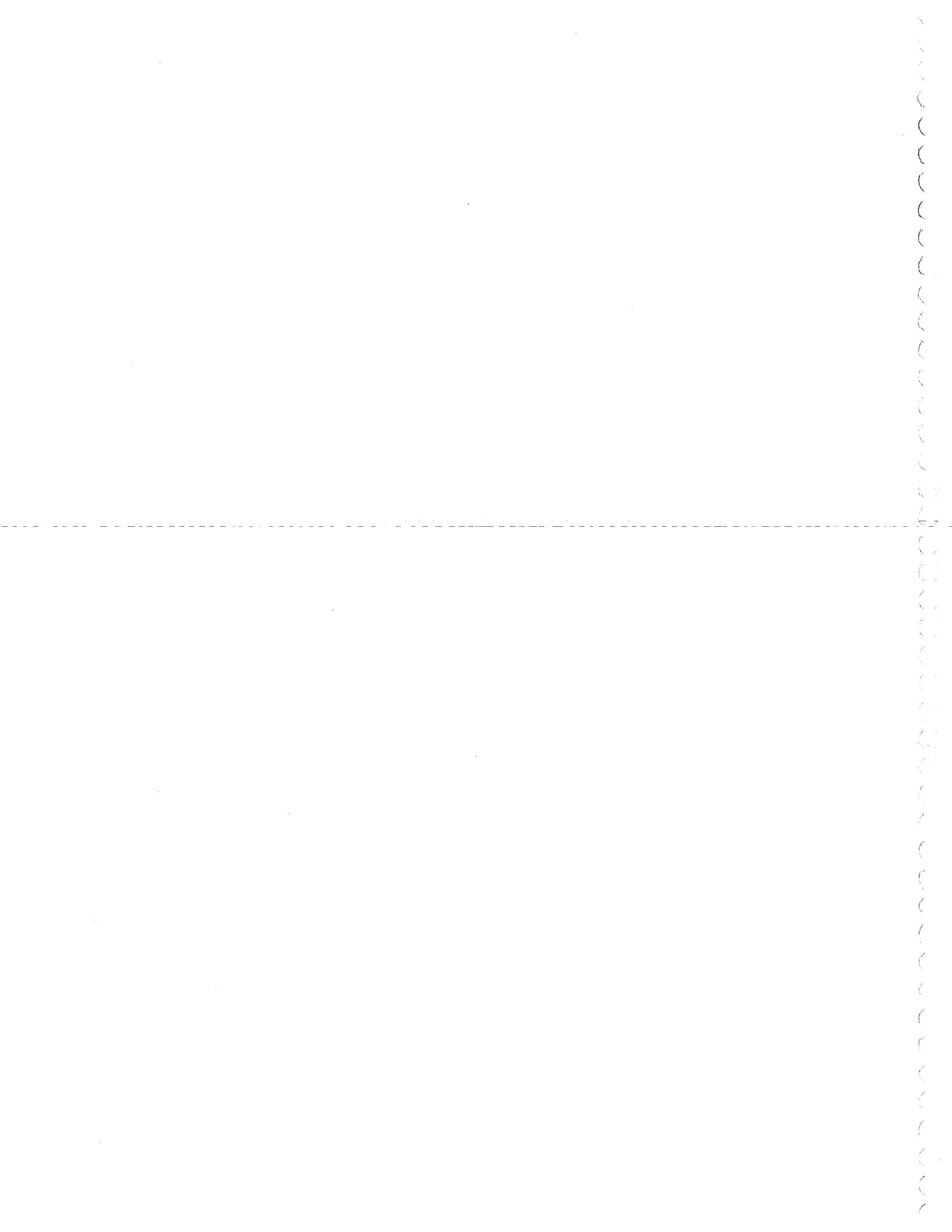
Sincerely,

Mary Beth Kenkel, PhD  
Chancellor

MBK/ns

*Fresno Campus*  
5130 E. Clinton Way  
Fresno, California 93727-2014

telephone  
(209) 456-2777(cspp)  
fax  
(209) 253-2267





# Fresno City College

1101 East University Avenue, Fresno, California 93741

*Office of the President*  
(559) 442-4600

March 4, 1999

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

Dear Symposium Participants:

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

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel L. Larios".

Daniel L. Larios  
President

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## United States Department of Agriculture

Research, Education and Economics  
Agricultural Research Service

March 22, 1999

Symposium Participants  
20th Annual Central California  
Research Symposium  
Fresno, California

Greetings:

On behalf of the USDA, ARS, Horticultural Crops and Water Management Research Laboratories located in Fresno, I would like to extend a welcome to you for the 20th Annual Central California Research Symposium. Fresno now has a large research community made up of scientists from state, university and federal sectors covering a multitude of disciplines (i.e., biological and physical sciences, agriculture, medicine). This Symposium provides an avenue for information exchange and possible lines of cooperative research among these scientists. It also provides an opportunity for the non-scientific community to "find out what's going on." I hope you take advantage of this opportunity to learn about research being conducted in the area. There also will be potential scientists at the Symposium. Who knows, maybe you can steer them towards your area of expertise.

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

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

With best regards,

A handwritten signature in black ink that reads "Patrick V. Vail".

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



### Pacific West Area – Horticultural Crops Research Laboratory

2021 South Peach Avenue • Fresno, CA 93727-5951  
Voice: 559.453.3000 • Fax: 559.453.3088 • E-mail: [lfouse@asrr.ars.usda.gov](mailto:lfouse@asrr.ars.usda.gov)

*Agricultural Research - Investing in Your Future*





Valley Children's Hospital

6300 Valley Children's Plaza  
Madera, CA 93638-8762  
(559) 554-3600

February 19, 1999

J.D. Northway, M.D.  
President and  
Chief Executive Officer

Symposium Participants  
20th Annual Central California  
Research Symposium  
**California State University, Fresno**  
University Grants & Research Office  
Fresno, CA 93726-1852

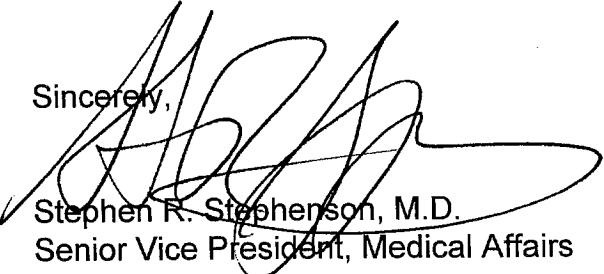
Dear Symposium Participants:

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

On behalf of all the physicians, staff, and volunteers at Valley Children's Hospital, we are proud to be a sponsor of the 20th Annual Central California Research Symposium to be held on April 16, 1999. 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

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Plenary Session

University Business Center  
Auditorium, Room 191

12:30      **Opening Remarks:**  
                    Dr. Brandt Kehoe, California State University, Fresno  
                    Dr. Thomas McClanahan, California State University, Fresno  
                    Dr. Donna Hudson, University of California, San Francisco  
                    Fresno Medical Education Program

12:40      ***A School-Based Conflict Resolution Program: Impact on  
Elementary Students and School Climate***  
                    Dr. Pamela Lane-Garon

12:55      ***Parental Characteristics as Predictors of Children's Self-Esteem***  
                    Katherine Calderon

1:10        ***Cancer Incidence Among California Farmworkers***  
                    Dr. Paul Mills

1:25        ***Effect of Cultivar and Canopy Management Practices on Yield,  
Fruit Composition, and Vegetative Growth of Grapevines  
Grown in the Southern San Joaquin Valley***  
                    Jon Affonso

1:40-2:00    **Break--University Business Center Gallery**

**Moderator:** Dr. Ethelynda Harding

**Graduate Judges:**

Dr. Cynthia Eayre  
Dr. Donna Hudson  
Dr. Thomas McClanahan

**Undergraduate Judges:**

Dr. Bruce Fujikawa  
Dr. Joseph Smilanick  
Dr. Rick Stewart



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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 Hospitalist: Friend or Foe? A Case Study***  
Dr. Lisa Adams, Dr. Paulette Ginier, Margie Feramisco, Paula Hensley
- (2) ***Investigation to Determine the Best Available Adhesive for Fastening Circuits to Aluminum Housing for Airborne Radar Hardware Applications***  
Tony Au, Phillip Barnhill, Matt Hofer, Nick Nguyen, Phillip Reisen, Billy Thai
- (3) ***Caregiver Report in Dementia: A New Caregiver Measure***  
Dr. Matthew Battista, Dr. Debra Pate, Dr. Robert Hierholzer, Dr. Jeffrey Mogelof, Dr. Avak Howsepian, Dr. Carey Gleason, Caitlin Macauley
- (4) ***Attitudes Toward Homophobia: Intimacy and Relationship Satisfaction in Same-Sex Verses Different-Sex Friendships***  
Ernest Bennett, Paola Kerneur, Marla Mitchell, Prashnitha Prakash, Dr. Lynette Zelezny
- (5) ***Solutions to Pell's Equations By Continued Fractions***  
Matthew Bourez, Todd Kandarian, Dr. Norman Woo
- (6) ***A Learned Flavor Aversion is Inhibited by Mere Extended Exposures to the Flavor: An Evaluation of Conditioned Inhibition with Flavors***  
Jonna Bowker, Matt Palmatier, Jenise Anderson, Dr. Cody Brooks
- (7) ***An Approach to Teaching Evening Classes in a Compressed Time Frame: A Preliminary Study***  
Tom Burns, Diane Decker
- (8) ***Latinos with Type 2 Diabetes: Demographics, Disease Severity, and Characteristics of Clinical Care***  
Jacinto Camarena, Stephanie Rodriguez, Wendy Brox, Dr. Robert Fernandez, Dr. Bruce Hoang, Susan Hughes, Dr. Sean Schafer



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

University Business Center  
Gottschalks Gallery

- (9) *Birth Order, Self-Esteem, Depression, and Conscientiousness*  
J. Clary, K. Gibson, T. Jessen, Dr. Lynette Zelezny
- (10) *Predictors of Cervical Dysplasia in Hispanic Women*  
Andrea Coronado, Kevin Martinez, Dr. Anna Gonzalez,  
Dr. Maria Vazquez-Campos, Dr. Norma Macias, Susan Hughes,  
Dr. Sean Schafer
- (11) *Does "Free Medicine=Inferior Control of Hypertension?*  
Dr. Bruno Garcia, Dr. John Zweifler, Angela Grasser, Leticia Salazar,  
Susan Hughes, Dr. Sean Schafer
- (12) *Gender and the Expression of Anger*  
Mark Glafke, Dr. Christine Edmondson
- (13) *The Presence of Progesterone Receptors in the Hippocampus of  
Alzheimer's Patients in Their Nineties*  
Benicia Hong-Goka, Fen-Lei Chang
- (14) *The Mean Time to Cancer Death from Palpable and Microscopic  
Prostate Cancer*  
Dr. Anthony Horan, Angelo Caplan
- (15) *Adolescent Self-Actualization, Free-Time and Boredom*  
J. Knapp, Dr. Lynette Zelezny
- (16) *Phenomenological Instruction Techniques Employed in Beginning  
Instrumental Materials*  
Darlene Kretchmer, Dr. George DeGraffenreid
- (17) *Neuropsychological Profile of Two Patients with Callosal Agenesis*  
Andrew Levine, Dr. Peter Russell

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

University Business Center  
Gottschalks Gallery

(18) *Intraperitoneal Injections of Cyanobacterial Extracts into MRL/lpr Mice Exacerbate Symptoms of Systemic Lupus Erythematosus*  
A.V. Mohan, D.G. Cox, Dr. Shirley Kovacs

(19) *Content Analysis: Messages from Magazine Advertisements Reaching Adolescents*  
Miwako Murasawa

(20) *Adult Attachment Style and Physician-Patient Interaction in the Medically Underserved*  
Ronda Niederhauser, Dr. David Nowlis

(21) *Geologic Influence on Nitrate Occurrence in Groundwater in the Arvin Area, Kern County, California*  
E. Clifford Raley, Dr. C. John Suen

(22) *Social and Psychological Factors Associated with Low Birth Weight Outcomes in African-American Women*  
Dr. Michelle Thomas, Dr. R. Tony Brown, Wendy Brox, Dr. Andrea Lourie

Poster Judges:      Dr. Andrew Alvarado  
                         Dr. Jerry Davoli  
                         Dr. Howard Ono

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## Concurrent Session A

**University Business Center  
Auditorium, Room 191**

2:00 *A Qualitative Study of Women in Law Enforcement Based on Astin's Sociological Model of Career Choice and Work Behavior*  
Kimberly Kodger, Stephanie Parmely, Dr. Diana Gilbertson,  
Dr. Jane Younglove

2:12 *Interactions of Visual and Semantic Information in the Memory Performance of Young and Older Adults*  
Dr. Matthew Sharps, Sandy Martin, Michael Nunes, Michelle Merrill

2:24 *Proper Utilization of Child Passenger Restraints in Fresno City: Most Common Errors*  
Dr. Pouran Nowzari-Sohrabi, Melanie Shouse

2:36 *Prenatal Health Care Behavior and Female Maquiladora Workers in Tijuana, B.C.*  
Dr. Victor Torres

2:48 *Youth Accountability Board Research Project*  
Eric Renshaw, Dr. Jane Younglove

3:00 *Exploratory Study of Cigar Smoking Prevalence Among CSUF Students*  
Rosemarie Amaral, Gloria Garcia, Tim Fahey, Dr. Dan Griffin

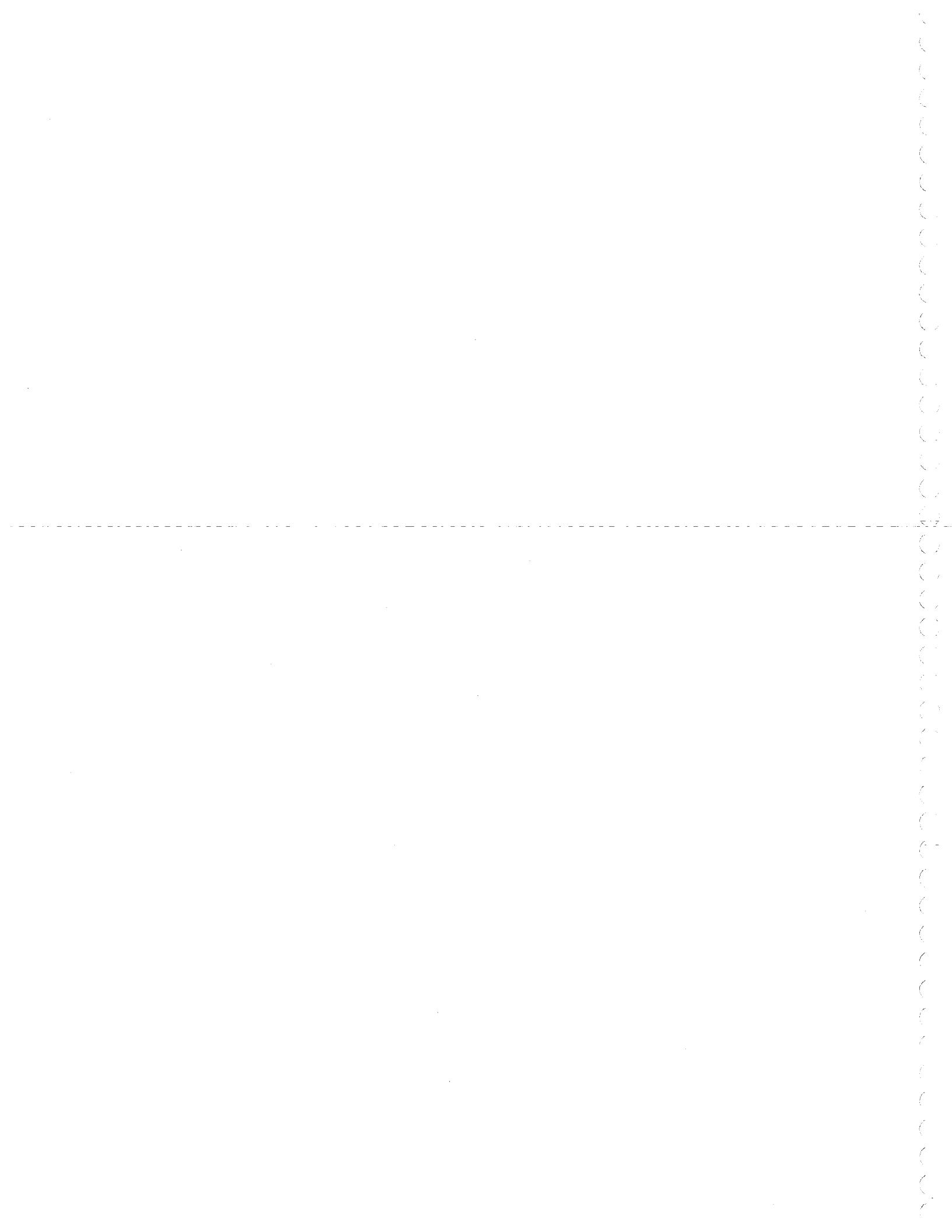
3:12 *Substance Abuse, Attention Deficit Disorder, and Comorbid Conditions*  
Jana Price-Sharps, Dr. Matthew Sharps, Sandy Martin

3:25 Break--University Business Center Gallery

3:40 Concurrent Sessions Resume

**Moderator:** Dr. Ethelynda Harding

Doctoral Judges: Dr. Merle Canfield  
Dr. Robert Wells



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Concurrent Session B

University Business Center  
Room 192

2:00      *Employee Involvement/Empowerment and Quality Indicators*  
            Dr. J. M. Moghaddam

2:12      *Downsizing in Academe: Nightmare or Nirvana*  
            Dr. Victor Panico, Dr. Jerry Jones

2:24      *Determining the Value and Efficacy of the Leadership Training and Team Challenge Course as an Experiential Learning Exercise in a Principles of Management and Organizational Behavior Class*  
            Lisa Houts

2:36      *Effective Teaching Methods in Soils Engineering*  
            Dr. Chandra Brahma

2:48      *Y2K: Course Challenges and Opportunities*  
            Dr. Jerry Jones, Dr. J. M. Moghaddam

3:00      *Belarus: A Divided Country*  
            Dr. Nina Antanovich

3:25      Break--University Business Center Gallery

3:40      Concurrent Sessions Resume

Moderator:      Dr. Mark Mayse

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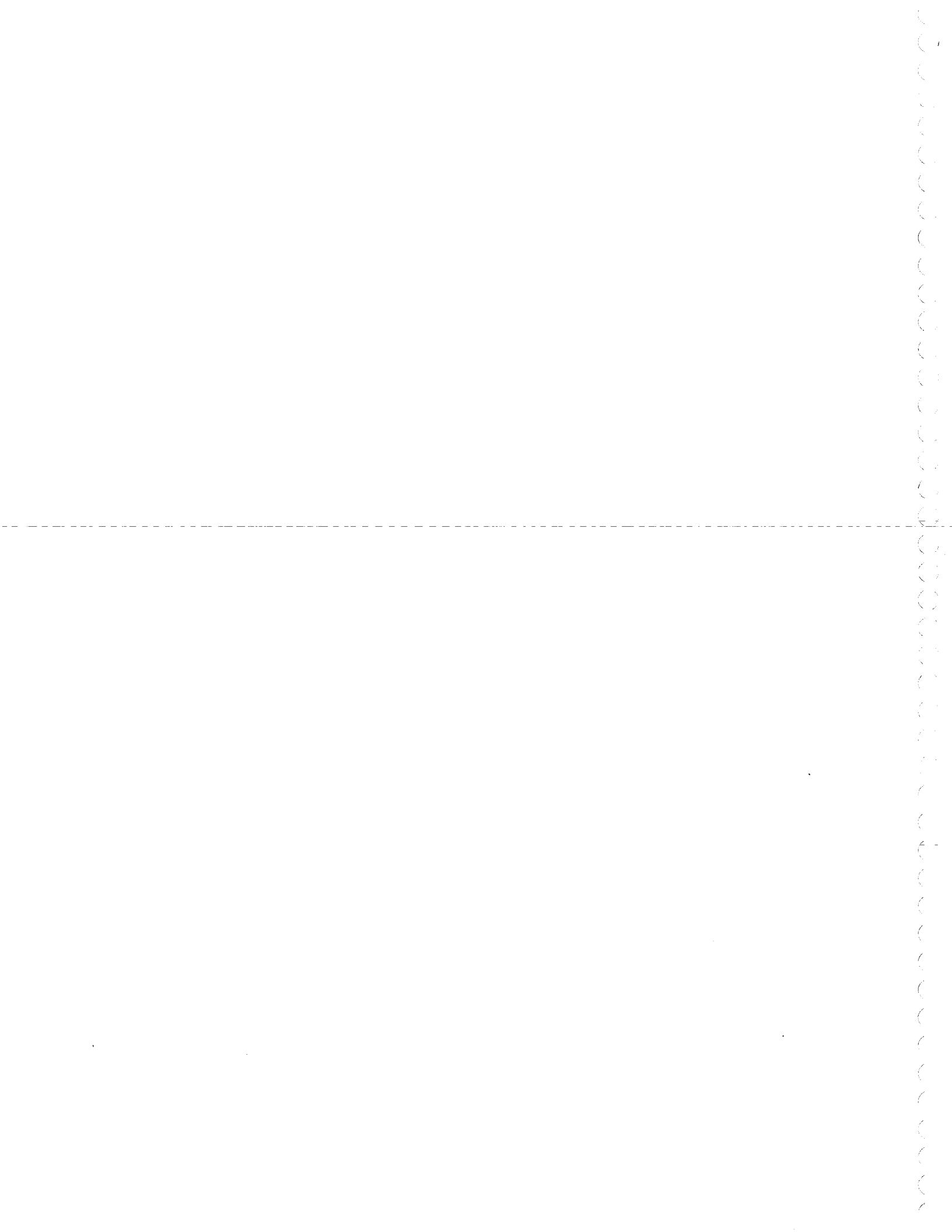
## Concurrent Session C

University Business Center  
Room 193

2:00	<i>Improving Access for Non-Ambulatory Students to Outdoor Field Trips</i> Randy Steiner, Dr. Roland Brady III, Craig Poole
2:12	<i>The Americans with Disabilities Act: Attitudes Toward Disabled People and Disability</i> Irene Gallegos, Dr. S. Zedeck
2:24	<i>Media Information on Eating Disorders and Eating Pathology Among College Women</i> Marlene Lee
2:36	<i>Health Promoting Behaviors in Mexican-American Women</i> Virginia Chaidez, Dr. Audrey Spindler
2:48	<i>Changes in Group Status and Liking</i> Evamarie Bauer, Dr. Radmila Prislin
3:00	<i>Predictors of Children's Academic Achievement</i> Sergio Romero, Dr. Terry Cronan
3:12	<i>Confidence Measures as Predictors of Performance</i> Kennard Nears, Dr. Paul Price
3:25	Break--University Business Center Gallery
3:40	Concurrent Sessions Resume

**Moderator:** Mr. Doug Carey

**Undergraduate Judges:** Dr. Bruce Fujikawa  
Dr. Joseph Smilanick  
Dr. Rick Stewart



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Concurrent Session D

University Business Center  
Room 194 AB

2:00      *Classical Roman Elements Within the High Medieval Church*  
Patrick Fontes, Dr. Victor Hanson

2:12      *Hypocrisy in Cato the Elder*  
Doug Favelo

2:24      *The Culture and Ideology of Fighting in Mass*  
Katherine Becker, Dr. Victor Hanson

2:36      *Jorie Graham's Poetry: Twenty Years of Unconventional Style*  
Frank Lopez, Dr. Chris Henson

2:48      *Hmong Mythology in/and 20th Century America*  
Ly Jalao, Dr. Eugene Zumwalt

3:00      *Charlotte Smith and the Romantic Canon: Where Do Women Belong?*  
Lacee O'Brien, Dr. Lillian Faderman

3:12      *An Exploration of Cross-Cultural Communication Barriers Among Women at California State University, Fresno*  
SherriLynn Colby, Dr. Mary Ludwig

3:25      Break--University Business Center Gallery

3:40      Concurrent Sessions Resume

Moderator:      Mr. Albert Rodriguez

Graduate Judges:      Dr. Cynthia Eayre  
Dr. Donna Hudson  
Dr. Thomas McClanahan

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## Concurrent Session E

University Business Center  
Room 194C

2:00	<i>Correlation Between Color Gradient and Mass Segregation in M30</i> Amy Tan, Dr. Puragra Guhathakurta
2:12	<i>Isolation and Characterization of the Diterpenoid Intermediate Perigrinol and Related Studies Pertaining to Marrubium vulgare (White Horehound)</i> Karlo Lopez, Dr. Roy LaFever
2:24	<i>Should Incompletely Excised Basal Cell Carcinomas Be Re-excised?</i> Sohrab Sohrabi, Shirin Sohrabi, Dr. Karim Sohrabi
2:36	<i>The Etiology of Pyromania: Misconceptions and Realities</i> Candy Pulley, Dr. Eric Hickey
2:48	<i>Assessing the Differences Between a Standard Measure of Achievement and Teacher Ratings for Bilingual and Monolingual Children</i> Lisa Mann, Dr. Terry Cronan
3:00	<i>Connecting William Faulkner and William James Through Time</i> Beatrice Valenzuela, Dr. Chris Henson
3:25	Break--University Business Center Gallery
3:40	Concurrent Sessions Resume

**Moderator:** Ms. Linda Mendez

**Undergraduate Judges:** Ms. Ginna Bearden  
Dr. Edward Lindley  
Ms. Danielle Magretta



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Concurrent Session F

University Business Center  
Auditorium, Room 191

3:40      *Determination of the Site of Vitellogenin Synthesis in the Ridgeback Shrimp*  
Ray Pooyan, Chris Holford, Dr. Brian Tsukimura

3:52      *Collaborative AIDS Prevention Research in Brazil*  
Dr. Norman Hearst

4:04      *The Mean Time to Death in Muscle Invasive Bladder Cancer with and without Cystectomy: A Long-term, Retrospective, Public Sector Outcome Study*  
Dr. Anthony Horan, Angelo Caplan

4:16      *An In Vitro Bleeding Time Test, Platelet-Stat<sup>TM</sup>, Correlates with the In Vivo Template Bleeding Time in Patients with Disorders of Primary Hemostasis*  
Dr. Daniel Brubaker, Carmel Brubaker

4:28      *Platelet-Stat<sup>TM</sup> Distinguishes Drugs that Affect Platelets: Use of a Statistical Construct*  
Davin Youngclarke, Dr. Daniel Brubaker

5:05      Conclusion--University Business Center Gallery  
Proceed to Student Awards and Social Hour

Moderator:      Dr. Ethelynda Harding

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## Concurrent Session G

University Business Center  
Room 192

3:40 *Good Pairs or Bad Pairs*  
Natalia Moore, Dr. Norman Woo

3:52 *Use of a PCR Reverse-Genetic Screening Technique for the Identification of a Mutation of At-Dad1 FROM Arabidopsis thaliana*  
Jean Wong, Dr. Alejandro Calderon-Urrea

4:04 *Toward Genetic Linkage Maps of Clarkia lingulata and Clarkia biloba ssp. australis*  
N.A. Sherman, Dr. Kristina Schierenbeck, Dr. James Prince

4:16 *Effects of an Anti-Bacterial Drug and Anti-Oxidants on Grafts*  
E. Smith, R.J. Stewart, K.T. Yamaguchi, A. Prentice, G. Clark, F.D. Fakhri

4:28 *The Native American Church and the Peyote Religion*  
Bernard Navarro, Dr. Robert Fisher

4:40 *The Effect of Metaphors on the Social Perception of Rape*  
Robyn Williams, Dr. Aroldo Rodrigues

4:52 *Theoretical Model for Apparel Design Curriculum: Fit Satisfaction, Body Cathexis, and Creativity*  
Elizabeth Swearingen, Dr. Nina Dilbeck

5:05 Conclusion--University Business Center Gallery  
Proceed to Student Awards and Social Hour

**Moderator:** Ms. Danielle Magretta

**Graduate Judges:** Dr. Cynthia Eayre  
Dr. Donna Hudson  
Dr. Thomas McClanahan



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Concurrent Session H

University Business Center  
Room 193

3:40      *The PreTeacher Assessment Center at California State University, Fresno: Preliminary findings from a Study of a Work in Progress*  
Dr. Walter Ullrich, Dr. Helen Kennedy

3:52      *Least Restrictive Environment?--Self-Concept of Deaf High School Students in Different Settings*  
Dr. Susan van Gurp

4:04      *The Congruence of Nahuatl Phonology and Vocabulary with Voynichese*  
James Comegys, John Comegys

4:16      *The Last Breaths of a Minority Language!*  
Dr. Atilano Valencia

5:05      Conclusion--University Business Center Gallery  
Proceed to Student Awards and Social Hour

Moderator: Mr. Doug Carey



## Concurrent Session I

**University Business Center  
Room 194AB**

3:40 *Investigation of a Simplified Test for the Adhesion of Fiber Composite Materials in Concrete Seismic Retrofitting*  
Dirk Weckerman, Marion Elpert, Dr. J. Larralde-Muro

3:52 *MKK6 Activation of NFkB in Cardiac Myocytes*  
Amy Mingo, Dr. Christopher Glembotski

4:04 *Evaluation of Commercial Fertilizer Recommendations for Home Gardeners*  
Cynthia Eroh, Dr. Sharon Benes

4:16 *Testing the cost Effectiveness of Using Commercially Available Mycorrhizal Inoculum for the Restoration of Disturbed Coastal Sage Scrub Community in Southern California*  
Griselda Hernandez, Dr. Michael Allen

4:28 *Detection of Nuclear DNA Degradation During Sexual Determination in Corn*  
Anthony Nungaray, Tanya Carroll, Dr. Alejandro Calderon-Urrea

4:40 *Disturbance of the California Spotted Owl*  
Patricia Moyer, Dr. Stephen Ervin, Tom Munton

4:52 *Captive Mountain Chickadee Feeding Behavior*  
Summer Malepeai

5:05 Conclusion--University Business Center Gallery  
Proceed to Student Awards and Social Hour

**Moderator:** Mr. Albert Rodriguez

**Undergraduate Judges:** Dr. Bruce Fujikawa  
Dr. Joseph Smilanick  
Dr. Rick Stewart



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## JUDGES FOR UNDERGRADUATE, MASTERS, AND DOCTORAL STUDENT PRESENTATIONS

Ms. Ginna Bearden	California State University, Fresno
Dr. Merle Canfield	California School of Professional Psychology
Dr. Cynthia Eayre	United States Department of Agriculture
Dr. Bruce Fujikawa	Fresno County Health Services Agency
Dr. Donna Hudson	University of California, San Francisco
Dr. Edward Lindley	Fresno City College
Ms. Danielle Magretta	California State University, Fresno
Dr. Mark Mayse	California State University, Fresno
Dr. Thomas McClanahan	California State University, Fresno
Dr. Joseph Smilanick	United States Department of Agriculture
Dr. Rick Stewart	Veterans Administration Medical Center
Dr. Robert Wells	Valley Children's Hospital

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



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# **ABSTRACTS**

**For Oral and Poster Presentations**

**(In Alphabetical Order by Presenting Author)**



## **The Hospitalist: Friend or Foe? A Case Study**

Ginier,P.,MD, Adams,L.,PharmD, Feramisco,M.,RN, Hensley,P.,RN

Dr. Paulette Ginier, ACOS-Geriatrics  
Veterans Administration Medical Center  
Poster Presentation

The concept of "Hospitalist" as a medical specialty is being advanced as a nationwide trend to provide acute care to patients in an efficient, high-quality and fiscally responsible manner. Can the patient's Primary Care team provide an equally efficient, quality and cost effective outcome? This case study presents two diametrically different treatment modalities that resulted in comparable clinical outcomes; however, efficiency, cost and risk- benefit ratio were vastly different.

Two acute treatment episodes of care were compared on the basis of cost, risk- benefit ratio and clinical outcome. The first treatment episode was conducted in an acute care facility under the supervision of a "hospitalist" (an inpatient specialist). The second, was carried out by the patient's Primary Care team in the less intense environment of the Geriatric Extended Care Unit (GECU).

The experience of this patient with both treatment models demonstrates that the "Hospitalist" design may not always meet its intended objectives. A similar seven-day course of treatment of an infection by the same organism showed a total cost savings of 71% when carried out in the GECU. Even though the bed cost per day was a significant factor in the differences in the cost of care, an additional and substantial 52% savings were realized in laboratory costs, and a 22% savings were realized in costs of medications. The risk-benefit ratio was evaluated by looking at the number of written medical orders, the number of professionals involved in this patient's care, and the number of laboratory draws. Is there an emotional risk for a patient who finds himself hospitalized and under the care of a medical team who is unknown to him? Is there an emotional benefit for a patient who experiences a care episode with his own Primary Care team?

What can be concluded from this case study is that the "Hospitalist", although having effected a positive clinical outcome, did not save money, time or reduce risk compared with a similar treatment episode by the patient's Primary Care team. Although the "hospitalist" model is a growing trend in the United States, measurements of the risks and benefits of this model are yet unknown and require carefully designed clinical trials.

**Effect of Cultivar and Canopy Management Practices on Yield, Fruit Composition, and Vegetative Growth of Grapevines Grown in the Southern San Joaquin Valley**

Jon Affonso (Graduate Research Assistant)  
R. Keith Striegler (Extension Horticulturist, University of Arkansas)

Viticulture and Enology Research Center, California State University,

Oral Presentation

Demand for premium cultivars has increased acreage of red wine grapes in San Joaquin Valley. Soil and climate differ significantly between the San Joaquin Valley and coastal districts where these cultivars are more common. Information on cultivar and cultural practices specific to this region would benefit both growers and wineries. This experiment evaluated the response of six red wine grape cultivars to basal leaf removal and shoot thinning in a warm climate. Cultivars include: Syrah, Sangiovese, Cabernet Sauvignon, Zinfandel, Barbera, and Merlot. Cultural practices treatments were: (1) No manipulation, (2) Shoot Thinning (prebloom), (3) Leaf Removal (berry set), and (4) Shoot Thinning plus Leaf Removal. Data were collected from 1996- 1998. Yield was determined from the clusters per vine and the weight per vine. Fruit composition was determined from a representative berry samples at harvest. Vegetative growth was determined from shoot counts, pruning weights, and nodes retained. Cultivar had a greater impact than cultural practices. Syrah and Barbera exhibited the greatest yield, good growth, and reasonable fruit quality. Cabernet displayed excellent fruit composition, good yield and good vegetative growth. Sangiovese produced a high yield due to large cluster size, but maturity was delayed and vegetative growth was poor. Summer bunch rot complex diminished Zinfandels yield. Merlot produced low yield, poor vegetative growth, but good fruit composition. Shoot thinning reduced yield and clusters/vine, and increased cluster weight and berries/cluster. Fruit composition and vegetative growth were not affected significantly by shoot thinning. Leaf removal did not significantly impact any parameter under the conditions of this experiment.

## **Exploratory Study of Cigar Smoking Prevalence Among CSUF Students Oral**

**Rosemarie Amaral, M.P.H.**

**Gloria Garcia, M.P.H**

**Tim Fahey, M.S.W**

**Dan Griffin, Ed.D**

**Fresno County Human Services System  
Department of Community Health  
Tobacco Prevention Program**

### **Oral Presentation**

According to the Centers for Disease Control and Prevention, tobacco use is the single most preventable cause of death in the United States, leading to over 400,000 deaths each year. In California, an estimated 41,883 persons annually die from the effects and consequences of tobacco (Office of Smoking and Health, Centers for Disease Control and Prevention, 1998). At national and statewide levels, cigar consumption is rising. Between 1993 and 1997, cigar consumption increased by almost 50 percent (Gerlach, K.K.; et. al., Office of Smoking and Health, Centers for Disease Control and Prevention, 1998).

In November 1998, a baseline survey of 200 students at California State University, Fresno was conducted to determine the prevalence of cigar use among college age adults. The survey was sponsored by the Tobacco Prevention Program of the Fresno County Human Services System. The survey instrument focused on a respondent's knowledge, attitude and perception about cigars and the effects of secondhand smoke.

Of the 200 survey respondents, 44.5 percent have tried at least part of one cigar. Male respondents were more likely to be heavy cigar smokers than women. Less than five percent of the women surveyed indicated smoking more than one cigar in their lives. There appears to be significant correlation between cigar smoking and cigarette smoking. Demographic variables of age, gender, ethnicity and year in school suggest implications for local policy and programs.

## **Belarus: a Divided Country**

Dr. Nina Antanovich

Department of Political Science, California State University, Fresno

Department of Politology, Belarusian State University (Minsk)

Oral Presentation

The objectives of the research are to trace the ways in which Belarus is considered to be a divided country, to analyze public opinion shifts, and to evaluate the prospects for democracy in Belarus.

The current research is based on the systems approach and structural functionalism's methods.

Belarus is a unique "divided country" in the heart of Europe in the terms of (1) the specific forms of Belarusian national identification; (2) cultural, ethnic and religious divisions; (3) the division in the political orientations of the Belarusian electorate; and (4) the division inside the political elite.

Inconsistent support for democratization and market reforms in Belarus is determined by the logic of internal development: the lack of national state development in the 19th and 20th centuries; the Belarusian population's separation from the interests and needs of the state; a lack of social politicization, and a low level of political culture, and the effect of the Chernobyl disaster.

The current political situation in Belarus is characterized by the existence of two dominating segments in public opinion. The first segment of the electorate are those who are in favor of a centralized leadership, state intervention, a planned economy, and socialist political values. This segment constitutes the support for the current political leadership. The second segment in public opinion includes citizens who are oriented toward democratization and market reforms.

There are two groups in the Belarusian political elite: industrialists and "ideologists." Since industrialists failed to manage the country and cope with crisis when V.Kebich was in power, the political influence of non-industrial social groups and related political forces has grown. The "Ideology of Belarusian statehood" is an issue of the policy agenda in Belarus now.

Samuel Huntington wrote that the cultural division of Europe between Western Christianity and Orthodox Christianity and Islam has reemerged. This dividing line cuts through Belarus, separating the more Catholic Western Belarus from Orthodox Eastern Belarus.

The divisions of Belarusian society are social and ideological rather than ethnic or religious. One fifth of the Belarusian electorate - the most active, best educated and young members of the population - creates the real basis for democracy.

# **Investigation to Determine the Best Available Adhesive for Fastening Circuits to Aluminum Housing for Airborne Radar Hardware Applications**

Dr. Tony Au

Undergraduate Students: Nick Nguyen, Matt Hofer, Billy Thai,  
Phillip Barnhill, Phillip Reisen

Industrial Technology Department, California State University, Fresno  
Poster Presentation

## **Introduction**

The purpose of this project was to investigate an alternative electrically conductive adhesive for airborne radar applications. The adhesive currently used in this type of application is the Ablestik: ECF506, this adhesive has problem with oxidation, so investigation for suitable replacement is needed. Raytheon Systems Company, Fullerton supported and funded this project.

## **Methods and Procedures**

The following steps were taken to insure the success of the project:

1. Organize the clinic team
2. Plan activities, schedule milestones.
3. Identify material requirements.
4. Benchmark electronic and avionics industry for current materials and processes.
5. Research vendors that produced electrically conductive adhesives using past clinic projects, Thomas register, Internet, and library.
6. Identify five materials that could be candidates for final selection using the Quality Function Deployment process.
7. Acquire adhesive samples of the five finalists.
8. Test adhesives.
9. Documentation of projects findings.
10. Presentation of the project findings to Raytheon Systems Company.

## **Findings**

Of the 196 vendors surveyed, 36 Technical Data sheets were obtained. These 36 Technical Data sheets were used in the initial Quality Function Deployment (QFD) process. The process provided information to select the five most promising adhesives. The adhesive from Chemical Technology Inc. had the best overall score with Locite Corp. 3882 only one point behind. These two adhesives were deemed by the team to be the best alternatives for the Ablestick: AblefileECF 506.

## **Conclusions**

There were electrically conductive adhesives that met and exceeded Raytheon's specifications, they were a silicon-based material. This presented problems with impurities and applications. If further work with manufacturing process could address the impurity problem, tighter specifications could become Raytheon's Standard.

## **Caregiver Report In Dementia: A New Caregiver Measure**

Matthew A. Battista, Ph.D., Debra Sue Pate, Ph.D., Robert W. Hierholzer, M.D.,  
Jeffrey Mogelof, M.D., Avak Howsepian, M.D.,  
Carey Gleason, Ph.D., Caitlin Macauley, M.A.

VA Central California Health Care System (VACCHCS)  
Poster Presentation

**Introduction:** Information about dementia patients provided by their caregivers affects diagnosis and treatment. We examined a newly developed caregiver report measure, the Activities, Behavior, Cognition and Mood (ABCM) questionnaire, designed and utilized in a larger project in which relationships between clinician and caregiver perspectives are studied.

**Methods:** Participants were 17 dementia patient/caregiver dyads. The ABCM is a 71-item questionnaire on which caregivers are asked to specify the frequency and degree of distress in relation to specific problems across four domains. Additionally, caregivers are asked to rank order overall severity and distressfulness for each domain. Dementia etiology and severity were clinically determined by consensus after review of records, neuropsychological testing and clinical interviews.

**Results:** Correlation of distress and frequency across all ABCM domains was .86. Correlations for each domain were also significant. Both frequency and distressfulness of problems varied significantly as a function of domain. The correlation between mean distressfulness of individual behaviors and the caregiver's global ranking of distressfulness ( $r=.48$ ) was significant only for the Mood domain.

**Conclusions:** Dementia patients experience problems with differing frequency depending on the problem domain. Areas within which they have more frequent problems are those for which caregivers report greater distressfulness. The strength of the correlation was surprising. The relative distressfulness of the problem areas depended on whether caregivers reported on individual problems within a domain or evaluated the domain as a whole. These preliminary findings suggest that the ABCM is a promising research instrument in the study of dementia caregiver report.

## **Changes in Group Status and Liking**

Evamarie Bauer (Undergraduate), and Professor RADMILA PRISLIN

San Diego State University  
Oral Presentation

According to social comparison theory, we evaluate our own opinions by comparing them to the opinions of others (Festinger, 1954). As people support us, our opinions are validated and we tend to like those individuals. This situation places us in a majority status within the group. Those who don't support us however, invalidate our opinions and we tend to dislike them. Our group status in this case is that of a member of the minority. There are other ways for people to establish majority and minority status within a group, but this study emphasizes opinions as the key factor.

Studies have been done in the past comparing the effects of status within a group and the individuals liking for the group and members. To the best of our knowledge however, no studies have investigated how changing status within the group affects liking for the group. In this study we decided to examine these effects by creating a situation in which initial status within the group was changed. The status of participants initially in a majority situation would decrease through declining support for their opinions, while those initially in the minority position would increase their situation by gaining the support of group members. We hypothesized that a loss of majority status would dramatically decrease liking, whereas gaining status would only slightly increase liking.

## The Culture And Ideology of Fighting in Mass

Katherine A. Becker and Dr. Victor Hanson

Department of History, California State University, Fresno  
Oral Presentation

Both the direct and general relationships between fighting in massed formation and the rise of egalitarian societies in the West are investigated.

Ancient and modern texts, historical and literary, are reviewed for references to and parallels between phalanx warfare and egalitarian ideology with a focus on the Greek and Swiss phalanx, as well as, the French, German, Spanish, and Italian columns and Napoleon's squares.

An analysis of the literature shows that phalanxes clearly arose out of egalitarian societies and were created to protect them. Yet, the sheer dynamism of phalanxes made them attractive formations to sovereigns who transmogrified the democratic formations and utilized them for their own personal aggrandizement. When leaders of the French revolution looked again to create an army of middling citizens, however, it was to the column that they turned. Equality became identified with arms-bearing, and civic militarism launched into the European consciousness the idea that to serve as a soldier made a man more, not less, of a citizen a lesson learned much earlier by the Greek and Swiss democrats.

Thus for practical purposes we can generalize about the tendency of the egalitarian-based phalanx to degenerate into a force for aggression. From the more pragmatic and often disingenuous implementors of the phalanx, we learn how easily defensive ideology can translate into aggression, how the elan of the mass can be used to thwart not enhance consensual government.

## Attitudes Toward Homophobia: Intimacy and Relationship Satisfaction in Same-Sex Versus Different-Sex Friendships

Ernest Bennett, Paola Kerneur, Marla Mitchell, Prashnitha Prakash,  
and Lynnette C. Zelezny, Ph.D.

Department of Psychology, California State University, Fresno  
Poster Presentation

This study examined the relationship between attitudes toward homosexuality, intimacy and relationship satisfaction in same-sex versus cross-sex friendships.

In this survey, 137 participants were asked to rate their best friend relationship (either same-sex or cross-sex) on friendship intimacy, as measured by the Personal Assessment of Intimacy in Relationships Survey (Schaefer & Olson, 1981), relationship satisfaction as measured by the Relationship Assessment Scale (Hendrick, 1988), and attitudes toward homosexuality as measured by the Index of Homophobia (Hudson and Ricketts, 1980). Analysis of variance was used to examine gender differences, and differences between same-sex (male/male, or female/female) and cross-sex friendships (male/female).

Gender differences were found on attitudes toward homosexuality  $F(2,132) = 4.01$ ,  $p = .020$ . Males reported higher levels of homophobia ( $M = 78.310$ ,  $SD = 12.516$ ) than females ( $M = 70.295$ ,  $SD = 16.745$ ).

Gender differences were partially supported on perception of friendship intimacy though these differences were not statistically significant,  $F(2,132) = 2.47$ ,  $p = .09$ . However, these findings may suggest that females perceive greater intimacy ( $M = 107.600$ ,  $SD = 23.912$ ) in their friendships than males ( $M = 99.517$ ,  $SD = 23.375$ ). Finally, it is interesting to note that males in same-sex friendships reported the highest levels of homophobia ( $M = 78.643$ ,  $M = 12.780$ ) while females in same-sex relationships reported the lowest level of homophobia ( $M = 69.909$ ,  $SD = 15.744$ ).

## Solutions to Pell's Equations By Continued Fractions

Matthew Bourez, Todd Kandarian, and Dr. Norman Woo

Department of Mathematics, California State University, Fresno  
Poster Presentation

Scientists and mathematicians, in particular, have always been interested in the solutions of Diophantine Equations  $x^2 - dy^2 = N$  (where  $N$  and  $d$  are integers,  $d > 0$  and  $d$  is square free) commonly known as the Pell's Equations. The early Greek and Indian mathematicians had considered special cases, but Fermat was the first to deal with it. As usual, he did not give a proof.

It is the purpose of this research to develop a systematic procedure to get the minimum positive solution of Pell's Equation of the form  $x^2 - dy^2 = 1$  ( $d > 0$  and  $d$  is square free) by using the technique suggested by Lagrange. The key to this procedure lies in finding the continued fraction expansion of  $\sqrt{d}$ . This project begins by developing the ideas behind the continued fractions and their convergents. It shows that every irrational number  $\sqrt{d}$  can be expressed as an infinite continued fraction. Furthermore, that infinite continued fraction expansion is periodic and its period is directly related to the minimum positive integral solution of  $x^2 - dy^2 = 1$ . Finally, some numerical examples will be given to demonstrate the technique.

**A Learned Flavor Aversion is Inhibited by Mere Extended  
Exposures to the Flavor:  
An Evaluation of Conditioned Inhibition with Flavors**

Jonna L. Bowker (undergraduate)

Matt Palmatier (graduate)

Jenise Anderson (graduate)

Cody Brooks, Ph.D. (faculty advisor)

California State University, Fresno  
Poster Presentation

Three experiments using rats investigated the effects of exposure to a flavor (saccharin solution) after conditioning an aversion to saccharin. The objective was to test whether the extent of exposure differentially affected inhibition of the saccharin aversion. Each experiment employed a separate evaluation of the degree of inhibition resulting from 3 or 9 exposures. In each experiment, saccharin consumption was initially followed by a lithium chloride (LiCl) injection, inducing illness. Different groups then received 3 or 9 saccharin exposures, 1/day, without LiCl. Saccharin aversions extinguish with 3 exposures. After exposure, tests for conditioned inhibition occurred. Fluid consumption was measured in milliliters. In two experiments, widely-accepted tests were used: retardation and summation tests. In the former, saccharin and LiCl were again paired and the rapidity of aversion reacquisition was measured. In the latter, saccharin was mixed with an already-aversive second flavor (vinegar) to evaluate the extent to which saccharin reduced the vinegar aversion. Saccharin-aversion reacquisition was slower in retardation testing, and the aversion to vinegar was weaker in summation testing, after 9 than after 3 saccharin exposures. An atypical test was used in the third experiment: a preference test. Saccharin exposed 3 or 9 times was evaluated in side-by-side tests with water. There was some convergent validity with the other two tests: A stronger preference for saccharin was found after 9 compared with 3 exposures; however, no absolute preference for saccharin was observed in either condition. Extended exposure more effectively inhibits flavor aversions. The results have implications for understanding aversion relapses, and for theories of, and uses for, flavor aversion inhibition.

## Effective Teaching Methods in Soils Engineering

Chandra S. Brahma, F.ASCE  
Professor of Civil Engineering

California State University, Fresno  
Oral Presentation

**Introduction.** Industry is an important customer of engineering education. Ignoring this relationship has produced graduates that often fail to meet the changing needs of industry in today's competitive environment. Serious questions are therefore raised concerning the effectiveness of present engineering education. Given industry's focus on a composite strategy, competition and collaboration, engineering educators have come under increased pressure to produce graduates who have not only developed skills in solving open-ended problems using computers, but also learned to effectively compete by working together on a team.

**Method.** The Soils Engineering course (CE 123) is revised to enhance students' abilities in ill-defined problem-solving using programming in FORTRAN, team work, engineering judgement and communications. In the course, the instructor presents basic theoretical concepts, emphasizes practical knowledge of soil behavior, solves numerical examples by hand, and assigns homework problems to be carried out by hand calculations. Subsequent to the understanding of underlying concepts and principles, the instructor introduces the relevant software developed in-house to students in a classroom demonstration with real world examples. The objectives of these sessions are to stimulate interest in the programs by explaining its logic, overall capabilities, underlying assumptions and specific terminology used, and step-by-step instructions on how to proceed. In addition, students' ability to evaluate computer output brings up an essential part of developing their engineering judgement. They decide relative merits of one procedure over another, based on the boundary conditions, the relative times needed to solve problems, and the precision of answers. The instructor assigns group projects on various topics and each group is required to complete one project, make presentations and prepare a project report.

**Results.** Students learn that the design process is invariably an intricate amalgam of old-fashioned, direct hands-on experience, judgement, measurement, and analysis, usually pursued on a trial-and-error basis and that how the results of the analytical procedures are used in design is far more important than the type of analysis. Computer-aided teaching methods develop, in as individualized a way as possible, students' integrative, analytical, innovative, synthesizing and contextual capabilities. Users of commercially available software should take the time to become familiar with the programs' limitations and idiosyncrasies prior to adopting them for analytical and design purposes.

**Conclusions.** Learning to design requires doing under the guidance and supervision of faculty with substantial industrial experience. In order for engineering education to remain responsive to our nation's needs in terms of practical, application-oriented engineering education, it is imperative that institutions must bring the know-how that exists in industry to the classroom, develop stronger connections with industry, and conduct computer-assisted instructions.

**An *In Vitro* Bleeding Time Test, Platelet-Stat<sup>TM</sup>, Correlates With the *In Vivo* Template Bleeding Time in Patients With Disorders of Primary Hemostasis.**

Dr. Daniel B. Brubaker  
Carmel K. Brubaker, MT(ASCP)

Precision Haemostatics, Inc

Oral Presentation

Platelet-Stat<sup>TM</sup> measures platelet plug formation *in vitro*, the initiation of primary hemostasis. In this study, we wanted to determine test performance in patients with disorders of hemostasis. We studied four patients with von Willebrand disease, five patients with thrombocytopenia, one patient with anticardiolipin antibody, one patient with Protein C deficiency, one patient with Glanzmann's thrombasthenia, and one patient with Hemophilia A. A template bleeding time was done on each patient who consented. The study was approved by a Human Subjects Investigational Review Board. A tube of blood was collected for the Platelet-Stat<sup>TM</sup> test. Two Platelet-Stat<sup>TM</sup> tests were used in most studies: a membrane composed only of collagen (COM), and a membrane that reproduced a vessel by containing collagen, fibronectin, fibrinogen, and von Willebrand factor, named SEM for subendothelial membrane. Shear rates on the membrane were at either 2000 or 8000 sec<sup>-1</sup>. The results for von Willebrand disease indicated a mean of 77.5±15 seconds for the COM and 29.5±7 seconds for the SEM test. Thrombocytopenia resulted in a Platelet- Stat<sup>TM</sup> test of 86.7±15 sec. for COM and 47±6.7 seconds for the SEM test. Using the t-test, three of the four Platelet-Stat<sup>TM</sup> tests were significantly different from controls (31.3±3) except the SEM test in von Willebrand disease. In all the diseases, prolongation of the Platelet-Stat<sup>TM</sup> test correlated with prolonged template bleeding time tests. These results indicate Platelet-Stat<sup>TM</sup> can diagnose diseases of primary hemostasis.

## **An Approach to Teaching Evening Classes in a Compressed Time Frame: A Preliminary Study**

Tom Burns, Lecturer; Diane Decker, Lecturer

**Craig School of Business, California State University, Fresno  
Poster Presentation**

There has been a growth of people who want to return to school to finish their degree and need to attend while maintaining income support for their household. The growth of private institutions that provide evening classes in a compressed time frame demonstrates this growing demand. This presentation addresses this need, how value is created for the student (a consumer of alternative class schedule and who wants a degree from a fully accredited university) and the maintenance of the integrity of CSUF.

A survey was used to determined the needs and values of students utilizing this type of teaching approach and class schedule. Additionally, we used the same performance measurements in comparing this group to a traditional semester class group. The program emphasized fundamentals teaching and the integrating of the lessons with applied experience. The approach also took advantage of different learning methods while exploiting the student as a partner in the teaching process. The instructor's role was as a facilitator, as a link between fundamentals and experiential understanding, and as an evaluator of performance in the course.

Results of the end measurement reflected an above average student performance. Additionally, the survey results indicated that over one-half of the students could not attend without an evening schedule and all indicated a strong preference for a compressed time frame. This program maintains the agenda of keeping CSUF a quality, accredited program and simultaneously enhances the value of offering a flexible program that continues to attract students with these increasingly diverse needs.

## **Parental Characteristics as Predictors of Children's Self-Esteem**

**Katherine C. Calderon (Undergraduate) and Professor Terry A. Cronan**

**San Diego State University  
Oral Presentation**

A child's self-evaluation is dependent on early experiences and interactions, especially with one's parents (Kawash, Kerr, & Clewes, 1984). These self-concepts consistently correlate positively with their parents' nurturance, acceptance, and support (Buri, Kirchner & Walsh, 1987). This evidence suggests that parents play a critical role in the development of their child's self-esteem.

The present study examined parental characteristics as predictors of children's self-esteem. Maternal self-esteem, parental educational expectancies for their children, level of education, established parent/child reading time, maternal hopelessness, and maternal depression were the variables examined.

Seventy-nine Head Start families with a child 1-, 2-, or 3-, years old were recruited to participate in Project PRIMER (Producing Infant/Mother Ethnic Readers). Trained University students administered measures to the participating parent. Children were administered either the Self-Perception Profile for children or the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children, depending on the child's age.

A multiple regression analysis indicated that maternal hopelessness and educational expectancies were predictors of children's self-esteem. A one-way analysis of variance was also performed. Results indicated that children who had a regular scheduled parent/child reading time had higher self-esteem than those children who did not.

These findings are encouraging because many disadvantaged parents are successful in "translating their high academic aspirations for their children into reality...Parents' behaviors, beliefs, attitudes, and goals can foster achievement striving and success in some disadvantaged children" (Halle, Kurtz-Costes, & Mahoney, 1997, p.527).

**Latinos with Type 2 Diabetes:  
Demographics, Disease Severity, & Characteristics of Clinical Care**

Jacinto Camarena, CSUF Undergraduate, Biology  
Stephanie Rodriguez, CSUF Undergraduate, Psychology

Wendy Brox, MPH

Robert Fernandez, MD

Bruce Hoang, DO

Susan Hughes, MS

Sean Schafer, MD

UCSF-Fresno Family Practice Residency University Medical Center  
Poster Presentation

**Purpose:** Diabetes Mellitus (DM) is 2-5 times more prevalent among Latinos. Type 2 DM is the 8<sup>th</sup> leading cause of death among California Hispanics and a well-established risk factor for cardiovascular disease. This study describes migrant, under-insured Latinos who receive their care in community health centers.

**Methods:** Cross-sectional study of health records of a Latino population with Type 2 DM. Medical records of 150 patients in 3 local community health centers were reviewed.

**Results:** Sixty-six percent were female; mean age was 57.1 (SD 13.8); 28.7% were uninsured. Mean duration of disease was 8.8 years (SD 8.3); 62% of the patients were treated with oral medications, 15% with insulin, 15% with insulin plus oral medication, and 8% by diet alone. Normal hemoglobin A1c (HgbA1C) levels (a measure of recent disease control) were seen in 28%; moderately elevated in 7%; high in 8%; and very high in 56%. The average number of co-morbid conditions was 1.4 (SD 1.3), the most common being hypertension. Peripheral neuropathy was the most common diabetic complication (16 patients), but 64% had no diabetic complications. A Spanish-speaking provider saw 34% of the patients. They were seen an average of 4.9 times/year (SD 4.1) and saw their primary physician 80% of the time.

**Conclusions:** Local Latinos with type 2 DM can be seen quite frequently and have good continuity with the primary provider, one third of whom are Spanish speaking. Despite these positive characteristics of care, over half the population had poorly controlled disease.

## **Health-Promoting Behaviors in Mexican-American Women**

Virginia Chaidez (undergraduate) and Dr. Audrey A. Spindler

San Diego State University  
Oral Presentation

The incidence of many chronic diseases is high in the Mexican-American population. Positive lifestyle habits of diet and exercise reduce the risk for chronic diseases. Reportedly, multiple barriers may exist against altering lifestyle habits in this group. First generation (N=9) and second generation (N=10) Mexican American women were interviewed in Spanish or English at their homes or workplaces to assess their knowledge about nutrition and exercise, health promoting behaviors, and degree of acculturation. The interview instrument combined several surveys, e.g., the Health Promoting Lifestyle Profile (HPLP) that had been validated previously in both English and Spanish. Student's t-tests were used to determine differences between groups in means for demographic variables and test scores (Systat, 6.0, 1996). There were no significant differences between groups on total scores for nutrition knowledge or health promoting behaviors, but first generation women scored significantly higher ( $p < 0.007$ ) on the fat subscale and significantly lower ( $p < 0.046$ ) on the exercise subscale of the nutrition knowledge test than second generation women. On the HPLP, second generation women had significantly higher mean scores for spiritual growth ( $p < 0.009$ ) and interpersonal relations ( $p < 0.002$ ) subscales than those of first generation women; but, scores on health responsibility, physical activity, nutrition, and stress management did not differ between the two groups. Age, years of residency, and educational level significantly affected acculturation scores. The HPLP total scores were affected solely by age, while educational level significantly affected total nutrition knowledge scores. Since the age of the first and second generation immigrants differed, the effect of generation of immigration on acculturation was confounded by the effect of difference in age of the subject groups. These results suggest that physical activity messages for first generation and dietary fat facts for second generation women would be appropriate interventions, especially when presented in a way that relates to making these changes to spiritual growth.

## **Birth Order, Self-Esteem, Depression, and Conscientiousness**

J.Clary, K. Gibson, T. Jessen, and Dr. Lynnette Zelezny

California State University, Fresno  
Poster Presentation

This study examined the relationship between birth order, self-esteem, conscientiousness, and depression. Sixty participants from California State University, Fresno were categorized into one of three groups: first-born, second-born, and third or later born. Only children were not used. In this quasi-experimental study, participants were given questionnaires which included the Coopersmith Inventory to measure self-esteem, the NEO Personality Inventory to measure conscientiousness, and the Self-Rating Depression Scale to measure depression. A significant difference was found between second borns and third or later borns on depression,  $F(2,57)=3.208, p>.05$ . The average level of depression for second borns was ( $M=31.7$ ) and for third or later borns ( $M=38.6$ ). Thus, third or later borns reported higher levels of depression. No significant differences were found between first borns, second borns, and third or later borns on conscientiousness,  $F(2,57)=.803, p>.05$ , nor for self-esteem,  $F(2,57)=.545, p>.05$ . These results underscore the influence of family structure (i.e. birth order) on mood (specifically depression); however, this study does not support that family structure is related to personality traits like conscientiousness and self-esteem. Recommendation for further research includes investigation of birth order on positive mood.

# **An Exploration of Cross-Cultural Communication Barriers Among Women at California State University, Fresno**

SherriLynn Colby (Graduate Student)  
and Dr. Mary Ludwig (Faculty Sponsor)

California State University, Fresno  
Oral Presentation

There are cultural constraints which prohibit the verbalization of questions to others about social and cultural differences. To explore this phenomenon and gain skills necessary to overcome it, a group of women from diverse cultures and lifestyles was brought together to participate in a discussion group funded by the CSUF USU Diversity Awareness Program. Women were recruited for the group by soliciting applications through flyers, campus advertising and faculty contact. The project was organized into nine weekly, two and a half hour, group sessions culminating in a three day weekend retreat. It was completed by eight participants and two facilitator/participants.

Key to group success was a safe environment where participants felt able and willing to release pretenses, become vulnerable and take risks necessary for positive intercultural discussions and relationships. Discussion guides, videos, and individual and group activities were used to stimulate and prepare participants for in-depth exploration. Discussion topics included: personal intercultural experience, discrimination, identifying racism and prejudice, interracial marriage, religion, sexual orientation, language, beauty images, and white privilege. Methods toward overcoming communication barriers were also discussed, including: conflict resolution, personal ethnicity, difference appreciation, comfort with cultural questions, and womanhood as cross-cultural common ground.

Participants were involved in difficult and highly disclosive group discussions and activities. Careful attention to a continually constructive environment allowed honest and positive discussion and successful conflict resolution. The pivotal factor in breaking social and cultural barriers which hinder cross-cultural communication was the ability to verbalize questions. This allowed for de-mystification of cultural difference and common ties then formulated. The shared experience of womanhood was a particularly strong cross-cultural link which served as the foundation for discovering numerous commonalities leading to stronger understanding and respect. Of great importance to participants were the outcome and future implications for project work done. At termination, participants concluded that similar small-scale and in-depth cross-cultural experiences are a viable method for overcoming cultural communication barriers and proliferation of such experiences in our campus community would greatly improve cross-cultural relations and understanding.

## The Congruence of Nahuatl Phonology and Vocabulary with Voynichese.

James C. Comegys, M.A.  
John D. Comegys, MA.

Martin Luther King Middle School, Madera,  
Oral Presentation

The Voynich Manuscript in the Beinecke Rare Book Library, Yale University, called "The World's Most Mysterious Manuscript" seems to be an unknown language written with an unknown script. Previous researchers have compared it to many languages without success.

The author, trained in linguistics at California State University, Fresno, using clues provided by his brother, John D. Comegys, worked out the values of the unknown italic script even involving his 7<sup>th</sup> and 8<sup>th</sup> grade Science classes at Martin Luther King Middle School, Madera, California. A suggestion by Jacques Guy, and many coincidental features suggesting the Francisco Hernandez scientific expedition to New Spain from 1571 to 1577 indicated the text might be in the language of the Aztecs.

When the Voynich manuscript is read from right to left, (and the page from bottom to top) a sort of shorthand appears which omits most vowels and is not altogether readable but which contains identifiable Aztec or Nahuatl words dealing with medical topics, mainly conception and treatment of sterility using typical Aztec methods, e.g. aroma therapy, sweat-baths, very hot water baths for birthing. The remainder of identifiable words and phrases deal with reporting. The text presents the values of the various Voynichese letters, and a vocabulary of words identified so far.

Jacques Guy's hint that the language was Aztec was invaluable, as were the tables of frequency of the suffixes, prefixes, and midfixes by Jorge Stolfi. In November of 1998 the author was able, using a system of phonetic equivalents for the odd Voynichese characters, to locate the majority of a list of common Voynichese words in a standard Nahuatl-English dictionary. Kudos to James Reeds, Stolfi, Guy, and the others who made this possible! This short publication is a breakthrough.

## Predictors of Cervical Dysplasia in Hispanic Women

Andrea Coronado, Kevin Martinez,

Anna Marie B. Gonzalez, MD (Assistant Clinical Professor),

Maria Vazquez-Campos, MD, Norma Macias, MD,

Susan Hughes, MS, and Sean Schafer, MD (Assistant Clinical Professor)

UCSF-Fresno Family Practice Residency, University Medical Center  
Poster Presentation

**PURPOSE:** Previous research has shown Hispanics are twice as likely as non-Hispanic whites to be diagnosed with cervical cancer and to die of their disease. The highest rates of cervical cancer are found in Central California Hispanics. This study examined the prevalence of known risk factors for cervical dysplasia and the association between pap results and ethnicity in a population of women receiving healthcare services at the Sequoia Community Health Foundation.

**METHODS:** This was a chart review of 1,316 patients aged 13-80 years who had pap smears done between January 1, 1997 and December 31, 1997. Review focused on known risk factors for cervical dysplasia: smoking, sexually transmitted diseases (STD), age, and ethnicity. Abnormal paps were defined by the Bethesda system.

**RESULTS:** Hispanics comprised 80% of the sample, African Americans 12% and whites 7%. Subjects mean age was 31.3 years (SD 11.4). A logistic regression model was constructed using variables: STD, age, ethnicity, smoking and a previous history of abnormal paps. The model revealed statistically significant results for age (odds ratio (OR) 0.85, 95% confidence interval (CI) 0.74-0.97), smoking (OR 2.02, CI 1.07-3.83), and STD (OR 1.90, CI 1.05-3.44).

**CONCLUSIONS:** Smoking, age and STD history showed significant results in abnormal pap smears. Ethnicity does not appear to be an independent risk factor in the development of cervical disease. An effort to increase educational programs targeting smoking and reducing the incidence of STD could result in lower incidence of cervical disease.

## **Evaluation of Commercial Fertilizer Recommendations for Home Gardeners**

**Cynthia Eroh (Undergraduate) and Dr. Sharon Benes (Faculty Sponsor)**

**Department of Plant Science, California State University, Fresno  
Oral Presentation**

One of the most important issues facing us today is the preservation of our groundwater supply. The potential for groundwater to become contaminated as a result of human activities is now understood, as is the importance of modifying our activities to minimize this contamination. Nitrates from fertilizers and animal wastes are the most pervasive types of groundwater contamination. In recent years researchers have been exploring the possibility of reducing fertilizer applications in farming operations, but not all nitrates stem from agricultural activities. According to the California Department of Food and Agriculture, 9.8% of fertilizers sold in California are for non-farm uses. Therefore, it is important that the fertilization practices of home gardeners are addressed as well as those of commercial farmers.

The objective of this study was to determine whether the application rates given by the manufacturers of two tomato fertilizer products are appropriate, excessive or inadequate. The assumption was that if application rates of farm fertilizers have been adjusted downward, home fertilization rates could also be reduced without significant loss to quality or yield.

Using these two products at the recommended application rate, at 1/2 the recommended rate, and at 1-1/2 times the recommended rate, tomatoes were grown on the California State University, Fresno campus during the summer of 1998. Preliminary measurements show minor differences in the growth rate of plants in the different treatment groups. There is also little difference in the number or weight of fruit produced. It appears that the application rates of these fertilizers could be reduced without adverse affects.

## Hypocrisy In Cato The Elder

Doug Favelo (Graduate Student)

California State University, Fresno  
Oral Presentation

This study intends to demonstrate the presence of an apparent discrepancy in the life of Cato the Elder, traditionally revered as the ideal Roman statesman. Respected by ancient and modern readers alike, this republican man was a bastion of traditional Roman virtue. Historians almost unanimously portray Cato as the exemplary Roman man, using his austere lifestyle, his yeoman work ethic, and his faithful obedience to the state as evidence.

Detaching oneself from Cato's innate heroic charm, one may be surprised to find a number of apparent contradictions between his didactic admonishments and the lifestyle he practiced; especially glaring is his distaste for Greek culture, despite his own Hellenic education. This study will evidence this discrepancy by a careful examination of the primary sources.

To research this problem I have first consulted Cato's own works, consisting of his treatise on Agriculture (*De Re Rustica*) and the extant fragments of a history called the *Origines*. I have also used the Catonian biographies by Cicero and Plutarch for evidence; I have consulted secondary sources only to supplement the information gathered from the primary sources.

Cato's xenophobia towards Greek culture is easily demonstrated: he warns Romans to avoid Greek affairs (and vice versa) several times throughout his extant works. Second, it is clear he was raised in the Hellenic tradition, judging from the company he kept during his military career (most notably the Hellenist Scipio Africanus) and his knowledge of Homeric legend. As a result, it is obvious that Cato promoted hostility to anything non-Roman while still possessing a thoroughly Greek education.

## **Classical Roman Elements Within the High Medieval Church**

**Patrick Fontes (Graduate Student) and Dr. Victor Hanson (Faculty Sponsor)**

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Oral Presentation

The High Medieval church contained a continuing legacy of Roman classical mores. Philology employed in papal bulls, church rituals, church architecture, ceremony, the power exhibited by popes such as Gregory VII and Innocent III, were all evolved forms of Roman classical institutions covered with a thin veneer of primitive Christian names.

Examined briefly within the presented paper Classical Roman Elements Within the High Medieval Church are the imperial insignia worn by the High popes, handed down not by Apostolic succession, but the Roman emperors of Late Antiquity. Not only did the papacy appear as an emperor, the Apostolic See sought also the reigns of imperial might; an examination of such power is therefore offered.

Two roads were birthed at the beginning of our common era -- the Christian church and the Roman Empire -- which, at first, appeared as the epitome of opposites. How then, 400 years later, did a fusion of the two take place, and 1,000 years later seek to rule Europe with all the force of Augustus Caesar under the guise of Christ?

## **The Americans with Disabilities Act: Attitudes Towards Disabled People and Disability Rights**

Irene Gallegos and Professor S. Zedeck

Department of Psychology, University of California, Berkeley  
Oral Presentation

The Americans with Disabilities Act was enacted as federal law in 1990 (ADA), since its mandate many management, law, human resources, and business professionals have struggled to understand the law and its implications for employees and employers under Title I of the Act. This project will assess employers' attitudes toward disabled persons and draw correlates with expressed disability rights attitudes. Specifically, this project intends to draw significant correlation between attitudes employers hold towards disabled persons and the Americans with Disabilities Act. Implications for employment and reasonable accommodations will be discussed bearing in mind the recent Enforcement Guidance publication: Reasonable Accommodation and Undue Hardship Under the Americans with Disabilities Act established U.S. Equal Employment Opportunity Commission (EEOC)

Significant research has addressed employers' attitudes toward employment guidelines in light of the ADA. Past research has mainly focused on the hiring process and employment of disabled workers (Sheid, 1997). Moreover, particular attention has been paid to ADA compliance and employer liability (Klimosky, et. al, 1993; Pollet, 1995; Satcher, 1992). This project will approach the broad issue of post-ADA employment practices with particular focus on the general attitude employers have of disabled persons as well as attitudes pertaining to disability rights. Although both types of attitudes have been investigated before (Hernandez, 1998; Berry, 1995), little has been in regards to correlating previously held attitudes toward disabled persons and attitudes toward the law.

This project stems from a noveau interest in the field of human resource management engendered by coursework and genuine interest in the broader field of industrial/organizational psychology. My eagerness to explore the ramifications the ADA has on the psychological processes underlying employment practices, as it pertains to disability rights attitude, is a fusion of personal and academic research interests which I plan to pursue at the graduate level.

Results of this study will be applicable to various fields of study and practice, among them industrial/organization psychology, law, and business. Non-academic institutions will also be interested in the results of the proposed project. For example, centers for independent living as well as advocacy groups and organizations may employ the results or knowledge gained from the project when. Moreover, employers may gain significant information regarding attitudes held by recruitment representatives and ramifications these may hold on the actual employment of disabled persons.

Pursuing such a project would contribute significantly to the field of study specializing in human resource management as well as the general field of psychology. It is crucial that business professionals comprehend the complexities of the new diverse workforce that has emerged in post-ADA era. This ambitious project will undertake the arduous task of adapting research methodology to a topic that has not been vastly explored due in part to its relative newness.

## Does "Free" Medicine = Inferior Control of Hypertension?

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Poster Presentation

**Background:** Pharmaceutical representatives often give sample medications (SM's) to physicians who distribute them to needy patients. In chronic conditions like hypertension this practice may lead to unnecessary medication changes, gaps in treatment, and inferior control of their disease. This pilot study explores the relationship between provision of SM's and severity of hypertension.

**Methods:** This was a telephone survey and medical record review of hypertension patients seen at Selma Community Health Center. Eligible patients needed to be uninsured or insured by Medi-Cal, have a telephone, and have made 3 visits within the preceding year.

**Results:** Fourteen of 53 eligible patients agreed to participate. Of these 14, 4 received SM's in the preceding year. Mean age for the SM group was 47; 3/4 were male and they made an average of 4.3 visits/year. In the non-SM group age was 64; 6/10 were male; and they made 6.5 visits/year. Mean blood pressure (BP) in SM patients was 149.1/95.3; in non-SM patients, mean BP was 148.4/82.1. There were 1.5 medication changes per patient in the SM group and 1.2 changes per patient in the non-SM group. All of the non-SM patients were insured; 75% of the SM patients were uninsured.

**Conclusion:** This pilot study suggests that patients who rely on free SM's for hypertension have worse BP control, possibly related to more frequent medication change. Non-insured patients were more likely to receive SM's than insured patients. Confounders like age and visit frequency will need to be addressed in the larger study.

## **Gender and the Expression of Anger**

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Poster Presentation

This study examines the relationship that gender may have in regards to the experience of anger and the strategies employed to cope with it. Relatively little research has been compiled on anger, and therefore information about diagnosis and treatment modalities for this phenomenon may be lacking.

Data for this study was obtained from the student population of CSUF and the local community of Fresno, California. Participants in this study volunteered to fill out a series of questionnaires that were administered as part of National Depression Screening Day (NDSD), on October 8, 1998. Participants who underwent depression screening were also asked to respond to an anger questionnaire. Each subject was presented with two anger provoking vignettes. Following each situation, the participants responded to a series of questions via a 9-item, Likert scale, as well as writing in their own words how they would react to the proposed circumstance. It is hypothesized that differences will exist between male and female self-report responses regarding anger expression and strategies used to cope with their experience. Analysis of this data is currently being compiled. Even though both genders may report a similar experience of anger, we expect to see differences in the strategies used to handle anger-related situations.

The goal of this research is to identify possible differences in the experience and expression of anger between genders, and thus improve current approaches to clinical assessment and treatment of anger.

## **Collaborative AIDS Prevention Research in Brazil**

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Oral Presentation

**Introduction** HIV/AIDS presents a new challenge to health care systems and researchers throughout the world. Since the beginning of the epidemic, Brazil has accounted for the majority of all reported AIDS cases in Latin America.

**Methods** Over the past 10 years, scientists at UCSF have collaborated with investigators in Brazil on a series of research projects related to AIDS prevention. These include studies on the epidemiology of HIV infection, and the behaviors that transmit HIV, research to better understand the context and motivations for risk behavior, and intervention studies that measure the impact of prevention programs.

**Results** Findings from several research studies will be presented, which involve a wide range of methodologies and research questions. These demonstrate substantial variation in HIV prevalence by location, risk behavior, and socioeconomic status. Understanding local social and cultural factors is essential to designing realistic interventions that can be shown to result in substantial reductions in AIDS risk behavior. These interventions can be conducted and their impact can be rigorously measured at modest cost.

**Conclusion** International collaboration between UCSF and Brazil has produced high quality science and information of great practical value for local AIDS prevention efforts in Brazil. Just as important, it has developed local capacity to conduct more such work in the future without foreign help. Many Brazilians involved in this collaboration have gone on to assume leadership roles in local AIDS control programs.

**Testing the Cost Effectiveness of Using Commercially Available  
Mycorrhizal Inoculum for the Restoration of a Disturbed Coastal  
Sage Scrub Community in Southern California**

Griselda Yolanda Hernandez (Undergraduate) and Dr. Michael Allen

San Diego State University  
Oral Presentation

The use of commercially available mycorrhizal inoculum, such as VAM 80, has become an accepted method to aid in the restoration of many disturbed areas of southern California. However, the use of commercial inoculum can be expensive and ways to provide more cost efficient methods of restoring impacted areas are desirable. To test the cost benefits of using commercial mycorrhizal inoculum for the restoration of a disturbed coastal sage scrub habitat, we are testing the use of commercial inoculum, the addition of local top soil and a control with no additives on a disturbed site at Camp Pendleton Marine Corps Base in San Diego County. Percent cover and growth determination, by species, will be recorded for one year during each season on all plots to determine the effect on germination and establishment of the use of VAM 80 and local topsoil inoculum. Above vegetation sampling will be augmented with spore, fungal activity and soil chemical analysis by mycorrhizal spore identification, europium staining for analysis of fungal activity, and chemical analysis to determine nutrient dynamics. Preliminary results suggest that VAM 80 may not be site adapted and not able to provide the maximum plant growth and survival compared to the local mycorrhizal species found in the adjacent topsoil. In such case, the local topsoil treatment may be adopted which will decrease costs of restoration and enhance vegetation productivity.

## **The Presence of Progesterone Receptors in the Hippocampus of Alzheimer's Patients in Their Nineties**

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and

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With the graying of the "baby boomers" and the increased life expectancy, the incidence of Alzheimer's disease (AD) is bound to rise. Epidemiologic studies show the beneficial effect of estrogen replacement in delaying the onset of AD. Increasing evidence demonstrates the role of steroid hormone progesterone in the preservation of memory in the elderly population. Earlier research findings from our laboratory in Alzheimer's disease patients demonstrated the presence of estrogen (ER) and progesterone receptors (PR) in the human hippocampus, a structure in the brain that plays an important role in memory. In the past few years, we have obtained cases of Alzheimer's patients who have died in their nineties. This age group has been of considerable interest as there is a lack of scientific data in this age group and beyond.

Six AD patients who lived to their nineties and 25 patients ranging from age 70-89 with clinico-pathological diagnosis of Alzheimer's disease are included in this study. Formalin-fixed paraffin-embedded hippocampal tissues from the left hemisphere were used. Eight-micron thick sections were incubated with monoclonal antibody against PR clone 1A6 (Dako, Carpenteria, CA) based on a target retrieval protocol. Each section was processed with both a PR positive tissue and a negative antibody control slide. The PR immuno-staining appeared as granular stippling in the cytoplasm of neurons but not glial cells. Cytosolic staining was present in the CA1 to CA4 subfields and the dentate.

This pattern of receptor presence and distribution is similar to that of patients of younger age (70 to 89). These findings across age groups support the sustained involvement of progesterone in the proper functioning of the hippocampus, a structure vital for memory processing.

Supported by UCSF-Fresno Alzheimer's Disease Program; UCSF-Fresno Foundation and VAMC Fresno.

## The Mean Time to Cancer Death From Palpable and Microscopic Prostate Cancer

Anthony H. Horan, M.D. and Angelo Caplan

Department of Surgery, Veterans Administration Medical Center  
Poster Presentation

Introduction: A ten year life expectancy is widely quoted as a prerequisite for consideration of screening and localized, ablative technology. However, this time span is seldom, if ever, footnoted to a peer reviewed source. This study was done to remedy that deficiency by looking for disease specific death beyond ten years.

Methods: VAMC Fresno's American College of Surgeons Approved tumor registry was combed for apparently localized prostate cancer (T1-3) for the years 1976-83. Disease specific death was plotted up to 1995 using BMOP Statistical Software.

Results: The mean time to death for T1 was 17 (S.E.=1.8) years; for palpable, stage T2-T3, it was 11.7 (S.E. 1.2) years.

Conclusion: The conventionally quoted ten years life expectancy (ages 71-73) is not young enough to allow a screened patient the joy of passing the theoretic day he would have died of prostate cancer had he not been screened and treated early. Age 62 for whites and 58 for blacks, as the upper age limit for screening and ablative therapy, fits our data better.

**The Mean Time to Death in Muscle Invasive Bladder Cancer With and Without Cystectomy: A Long Term, Retrospective, Public Sector Outcome Study.**

Anthony H. Horan, M.D., and Angelo Caplan: VAMC

Fresno Dept. of Surgery,  
Oral Presentation

**Purpose:** to determine whether cystectomy for muscle invasive bladder cancer has been associated with greater cancer specific longevity than bladder sparing strategies.

**Methods:** 75 patients with ***muscle invasive*** bladder cancer from 1976 to the present were extracted from the tumor registry of the VAMC Fresno and classified into *radiologic* stages 1-4. 1= no radiologic signs; 2= bladder wall thickening; 3=hydronephrosis /enlarged regional nodes on C.T.; 4= distant metastases. The mean time to death from bladder cancer for those that did and did not have cystectomy was calculated from Kaplan-Meier curves in the BDMP statistical program. Radiologic stage 4, alive, dead of other causes, and unknown were censored.

**Results:** the mean time to cancer specific death for the radiologic stages 1-3, bladder sparing group was 11.5 years; for the cystectomy group it was 5 years (  $P=.005$  ). For radiologic stage 2 only, the P value was .03. For radiologic stage 3, it was not significantly different between bladder sparing and cystectomy.

**Conclusion:** this data indicates that a randomized, prospective study of cystectomy versus bladder sparing is as necessary as it was in breast and is in prostate. Informed choice discussions with patients must, at a minimum, now mention the equivalence of bladder sparing.

**Determining the Value and Efficacy of the Leadership Training and Team Challenge Course as an Experiential Learning Exercise in a Principles of Management and Organizational Behavior Class**

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California State University, Fresno  
Sid Craig School of Business, Department of Management  
Oral Presentation

The Experientially Designed Group Effort (E.D.G.E.) ropes course is an experiential learning exercise used by a variety of groups including businesses to build skills in communication, leadership, goal setting, and problem solving and to develop teamwork, trust, and self-esteem. The purpose of this study was to determine the effectiveness and appropriateness of the ropes course as a learning enhancing tool for classes dealing with general management or organizational behavioral topics.

A survey was conducted of thirty students in a management class who volunteered to participate in a four hour "Leadership Training and Team Challenge" ropes course consisting of physically and mentally challenging activities involving ropes, cables, and utility poles. Thirty participants and 21 nonparticipants were surveyed to determine their reaction to the ropes course offering and its perceived usefulness in applying material covered in a basic management and organizational behavior class.

All surveyed participants said they would recommend the ropes course to other management students. Seventy-seven percent of participants said their satisfaction with the management class had increased, and none indicated a decrease in satisfaction. Examples of the development of valuable skills in teamwork, communication, leadership, trust, and risk taking were identified and are discussed. Nonparticipants often expressed regret that they had been unable to come due to work or other constraints.

In sum, participants indicated overwhelming satisfaction with the ropes course and its ability to teach valuable management and organizational behavior skills. It can also enhance the class culture and the self-esteem of the students.

## Hmong Mythology in/and 20th Century America

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Oral Presentation

With a history dating back a few millennia, the Hmong people of Laos have recently resettled in the U.S. and in most other industrialized countries. The post-Vietnam War exodus caused a major disruption in the lives of these people who had, until then, retained a high degree of autonomy from the ruling majority of the various lands they have inhabited throughout history. Today, the Hmong in America face social forces that are much greater than any they had ever faced before, and this crisis has, in part, caused the disintegration of traditional Hmong culture and belief systems. This paper seeks to understand those beliefs through the most important cultural transmitter of Hmong culture: the oral tradition of Hmong myths and folktales.

The Hmong did not have a written language until the 1950s, when Western missionaries invented one for them. Therefore, the oral stories of the Hmong constitute their principal means of transmitting the culture to future generations. The concepts of myth and folktale as understood by the Hmong is explained in this paper, as is the relationship between these narratives and their audience.

These stories contain the Hmong traditional cosmology, and as such, their importance to Hmong Americans is invaluable in helping this new group of immigrants understand not only that particular cosmology, but also how it applies or does not apply to the realities of 20th century America.

## **Y2K: Course Challenges and Opportunities**

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Management Department Craig School of Business  
California State University, Fresno  
Oral Presentation

The grades received by government agencies for inadequate preparation for Y2K problems, highlight similar problems for some university batch-processed management simulations. This paper discusses the impact of the Y2K problem on two such simulations taken by over 1,200 students each year in the Craig School of Business and the results of research designed to identify a feasible solution for one from alternatives.

The authors identified and analyzed simulation alternatives that would keep pace with the ever-increasing emphasis on the World Wide Web (WWW) as a teaching tool and allow students to experience the challenges of managing a production system. Evaluation of alternatives was based on satisfaction of course subject matter requirements; cost to students in dollars, computer requirements, and time in and out of class; and efficacy for integration into WWW based instruction.

Alternatives considered included three successfully implemented by other universities. They were Raymond's MJ Simulation Series that allows students to simulate management of a retail store over the internet, Java-based exercises used at Princeton by Bernstein that involve web-based labs to facilitate information technology in decision making, and experiential activities such as those used at Syracuse.

A comparative analysis of alternatives led the authors to select a hybrid approach integrating a self-developed web site, WWW Course Tools, and a production/operations textbook web site. They concluded such a hybrid approach would most enhance course quality and effectively facilitate knowledge acquisition and dissemination as well as communication among faculty and students.

## Adolescent Self-Actualization, Free-Time and Boredom

Knapp, J. (Undergraduate)  
Zelezny, L.

California State University, Fresno

The purpose of this study was to examine the relationship between adolescent self-actualization, free-time and boredom.

Eighty-five volunteers were obtained from Psychology 10 students at CSUF. Participants were asked to self-report about their feelings of self-actualization (Short Index of Self-Actualization (Jones & Crandall, 1986)), free-time (leisure) (Leisure Experience Battery for Adolescents (Caldwell, Smith & Weissinger, 1992)), and boredom (Experience of Activities Scale (Farmer & Sundberg, 1986)). There were no sensitive questions in these surveys, and all participants responded to each question. The surveys took approximately 20 minutes to complete. All subjects were given an informed consent and debriefed.

Study found a significant positive relationship between free-time (leisure experience) and boredom,  $r(86)=+.625$ ,  $p<.001$ . A significant negative relationship between self-actualization and boredom,  $r(86)=-.574$ ,  $p<.001$ , was also found. In addition, a significant positive relationship between the amount of free-time and boredom was found,  $r(85)=+.231$ ,  $p=.032$ . And finally, a significant negative relationship between free-time (leisure experience) and self-actualization,  $r(86)=-.386$ ,  $p<.001$ .

Results of this study support the overall concept that an individual's personal growth and development very much affect their perception of quality in experience of activities. In addition, it dispels, for the most part, the opinion that a sense of boredom in adolescents is based on not having enough to do. Quantity of free-time plays a very limited role of 5% of the variability in the level of boredom.

# **A Qualitative Study Of Women in Law Enforcement Based On Astin's Sociological Model of Career Choice and Work Behavior**

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Oral Presentation

## Introduction

Over the past three decades there has been nearly a five fold increase in the number of women in law enforcement; however, the number of women in executive level positions, e.g., sergeant, lieutenant, and chief, has lagged seriously behind. Gender discrimination, resistance to intrusiveness, and persistent stereotypes of women, among other factors, have been shown to contribute significantly to the systematic exclusion of women from the higher ranks of law enforcement. Not surprisingly, women interested in careers in law enforcement have not traditionally contemplated the senior levels of law enforcement to any significant extent. It is interesting, then, why the few women who have attained senior level positions have, in fact, done so. In an initial series of interviews with women in law enforcement who have attained higher level positions, mentoring and networking were consistently mentioned as critical factors in molding career choice and achievement. The present study is a follow-up to a study which assessed the applicability of Astin's "Sociological Model of Career Choice and Work Behavior" to women in law enforcement. The focus of the current study is on how the expectations of women in law enforcement impact aspiring to higher level positions.

## Methods

Qualitative research methodology is used, including semi-structured interviews, with a sample of six women in law enforcement. Data are analyzed utilizing Strauss's grounded theory.

## Summary of Results

Preliminary results suggest a trend among those who succeed in attaining, or aspiring to, the senior levels of law enforcement toward reliance on mentoring and networking -- with both male and female colleagues. The results comport with a model for career choice first suggested by Helen S. Astin's "Sociopsychological Model of Career Choice and Work Behavior."

## Conclusions

Astin's model for career choice seems to explain the phenomenon of women in law enforcement sidestepping the traditional barriers to attaining higher level positions in a male-dominated field. Initially women moved into law enforcement generally due in large part to restructuring of opportunities. However, women's expectations have not yet notably been modified by the changes in structure of opportunity: mentoring and networking must become the norm.

## **Phenomenological Instruction Techniques Employed In Beginning Instrumental Materials**

**Darlene Kretchmer (Graduate) and Dr. George DeGraffenreid (Faculty Sponsor)**

**Department of Music, California State University, Fresno  
Poster Presentation**

The purpose of this research was to identify Kodály or Kodály-like techniques used in published individual and classroom instrumental method books. The core techniques identified were vocalization, mnemonics, eurhythmic movement, and creativity, utilized in a phenomenologically (sound before symbol) based approach. Ten instrumental method books were examined to identify techniques to develop music literacy skills through adherence to a systematic phenomenological teaching process of preparation, awareness, reinforcement, and assessment.

Detailed examination revealed four method books incorporate some to most of the Kodály and Kodály-like techniques in the delivery of instruction. These four books were not among those commonly used in California and Washington.

**A School-Based Conflict Resolution Program:  
Impact on Elementary Students and School Climate**

Pamela S. Lane-Garon, Ph.D.

Department of Educational Research, Administration and Foundations,  
California State University, Fresno and the School Research Center  
Oral Presentation

The purpose of the study was to evaluate conflict resolution program effects on elementary student social-cognitive development and school climate. These variables were examined in the second year of a school-based, conflict management/education program at Bethune Elementary School in southwest Fresno. Social-cognitive perspective taking (the tendency to consider another's thoughts and feelings), empathy, strategy choice, personal history with violence, and school climate were measured at pre and post intervals with respect to peer mediator (students who are trained to facilitate the dispute resolution of their peers) training and practice. A school with similar demographics, where no conflict resolution program was in place, served as a control. A statistically significant effect for cognitive perspective taking was revealed, indicating that both trained and untrained students increased their dispositional tendency to consider the perspective of others after program implementation. An empathy effect, however, was illusive. Additionally, all students, regardless of personal history with violence, appeared to benefit from program implementation. Student preference for independent conflict strategy choices increased from pre-to-post assessment. Patterns associated with ethnicity were also revealed with African American students showing the greatest pre-to-post increase in cognitive perspective taking and Hispanic students the greatest pre-to-post increase in preference for independent conflict resolution strategies. Finally, school climate measures point to an enhanced sense of safety among school community members. Study findings support the conflict resolution program's contribution to positive school climate.

## **Media Information on Eating Disorders and Eating Pathology Among College Women**

Marlene Lee (Undergraduate)

California State University, Fresno  
Oral Presentation

The role of the media in contributing to the high rates of eating disorders among females has been identified and thoroughly examined. Specifically, investigators have postulated that the media propagates the thin ideal which in turn, promotes and maintains anorexia and bulimia. Nevertheless, little research has examined the specific link between media information on anorexia and bulimia, and eating disorder symptomatology. This study examined the relation between exposure to information on eating disorders found in the media, and the risk of developing pathological eating behavior among female college students. A sample consisting of forty-two female participants, ages ranging from 18-34 years, answered a self-administered questionnaire designed to elicit information on their type of exposure to eating disorder information (media or non-media), as well as their past and present eating attitudes and behavior. Results of the study indicated that greater media exposure was related to a lower risk for developing an eating disorder ( $t = 2.103$ ,  $p <.05$ ). This finding was especially pronounced for magazine media sources, which were used by 63.6% of the Not-At-Risk women compared to 33.3% of the At-Risk women. Although the study revealed that first time encounters with media information on eating disorders led to some imitation of anorexic or bulimic behaviors among both groups of women; in general, exposure to media information may have served an educational function in reducing one's risk for developing clinical eating disorders.

## **Neuropsychological Profile of Two Patients with Callosal Agenesis**

Andrew Levine, M.A. (Doctoral Student, CSPP) and Peter Russell, Ph.D.

Central Coast Neurobehavioral Center  
Poster Presentation

The corpus callosum is the main commissure of the brain involved in the transfer of information between the two hemispheres, and is key in the integration of qualitatively different processes. The role of the corpus callosum is most obvious in callosotomized patients, in whom the commissure has been severed in order to control the spread of seizure activity. In these "split-brain" patients, the lateralization of brain functioning is made blatantly clear because they can no longer integrate information between hemispheres, and are thus left with two essentially independently functioning brain halves. Less clear are the effects of congenital abnormalities of the corpus callosum. These abnormalities range from complete absence of the commissure to partial malformation. Both have been studied for many years, and have been associated with such things as non-verbal learning disorder, tactual identification problems, and mental illness. One leading theory that has come from the research is that callosal agenesis leads to suppressed functioning of one hemisphere. However, in the majority of these former studies, the methods of assessment fall short of today's standards, and the subjects have often had other impairments and physical anomalies which confounded the results. We have had the rare opportunity to assess two very similar cases of partial corpus callosal agenesis with a comprehensive neuropsychological battery. Both were confirmed with brain imaging. Our results show a similar pattern of scores, supporting the theory of hemispheric suppression, and suggest that in these patients lateralization of functioning between the hemispheres is drastically altered.

## **Jorie Graham's Poetry: Twenty Years of Unconventional Style**

**Frank Lopez (Graduate) and Dr. Chris Henson (Faculty Sponsor)**

**Department of English, California State University, Fresno  
Oral Presentation**

Poetry is an art form that plays with grammar, punctuation, and usage of language. In contemporary poetry the rules of what constitutes a poem are basically up to the discretion of the poet. Though there are certain strict forms of the art such as sonnets, prose poems, haiku, etc., when it comes to writing free verse, the field is virtually wide open.

However, as in all art forms, there are trends that end up becoming “rules of convention” within an art form. Artists who defy the “rules” are the ones that usually set new trends within an art form. In poetry such trendsetters--rule breakers if you will--have included the likes of Emily Dickinson, Walt Whitman, Allen Ginsberg, and Adrienne Rich, to name a few. Currently, one such contemporary poet who has become renowned for her own breaking of trends is Jorie Graham.

The form in Graham's poetry has been the focus of many critics for its unconventional style; it seems readers are either taken with its experimental form or question it for its inaccessibility and its breaking the conventional rules of poetry. Over the last twenty years Graham's poetry is one of the best illustrations of how a poet's style can change throughout a career. Graham's Pulitzer Prize winning *Dream of a Unified Field* is a collection of the first five books of her career. Upon first reading *Dream of a Unified Field* one is taken aback by the drastic changes her works seem to have undergone over the first twenty years of her career. In reading her works it is the changes of form from book to book that becomes her style. Graham's works have seemed to defy becoming *genrelized*.

Isolation and Characterization of the Diterpenoid Intermediate Perigrinol and Related Studies  
Pertaining to *Marrubium vulgare* (White Horehound)

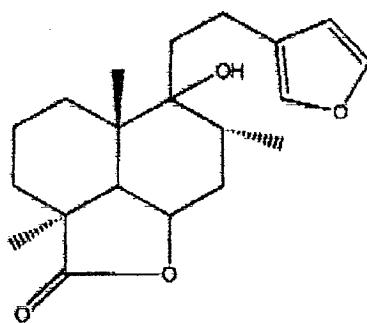
Oral Presentation

Karlo M. Lopez  
Undergraduate Student

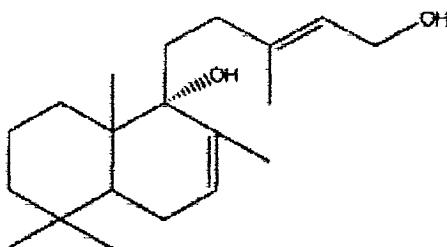
Roy E. LaFever

Department of Chemistry  
California State University, Bakersfield

Marrubiin (I) is the major constituent in the perennial herb *Marrubium vulgare* (common horehound). Marrubiin is a member of the terpenoid class of natural products, and known as a furanic labdane. Extracts from the plant have been shown to have anti-inflammatory and antibiotic properties and have been used for thousands of years in folk medicine. Until recently, little was known about the biosynthetic pathway enroute to marrubiin. Our efforts have focused on the isolation and characterization of the biosynthetic intermediate, perigrinol (II), as well as determining the amount and location of marrubiin production by the plant.



Marrubiin (I)



Perigrinol (II)

To isolate the marrubiin precursor a large-scale extraction was carried out and the acetone soluble material separated using column chromatography (alumina). Fractions were analyzed using GC/MS under Selected Ion Mode (SIM) and fractions containing prominent ions, diagnostic of potential intermediates, were then further fractionated by column chromatography (silica). Using this protocol, perigrinol, the enediol intermediate, was isolated and further characterized. To localize the site of marrubiin production small-scale extractions were carried out on roots, leaves, and stems, separately. These extracts were then analyzed using GCMS and the marrubiin content of the individual tissue types determined.

## **Captive Mountain Chickadee Feeding Behavior**

Summer C. Malepeai

University of California, Davis  
Oral Presentation

The study's primary objective was to quantify and compare Mountain chickadee feeding strategies between younger and older birds, and between birds housed in groups versus those housed individually. A secondary objective was to identify correlations between behavioral observations and size differences of the birds housed together as evidence of a dominance hierarchy within these groups.

Phase I of observations compared younger versus older birds handling wax worms, pine seeds, and sunflower seeds, quantitatively focusing on stabbing and caching frequencies. Phase II compared young birds group-housed versus those housed individually, quantitatively focusing on stabbing and caching frequencies and aggressive behavior in a group setting.

Older birds stabbed and cached food at a higher frequency than younger birds. There was no significant caching frequency difference between group-housed and individually housed younger birds. Older birds displayed a definitive strategy for eating wax worms: shaking the body, stabbing the head, tearing at the body, and swallowing the carcass. Younger birds housed together specialized in seed feeding strategies: grabbing a seed, stealing one, fighting for one, or forcing another to share.

Within groups, feeding behaviors in captivity qualitatively correlated with weight differences. Heavier birds were dominant and aggressive, independently approaching food and subsequently being victimized by lighter birds. Lighter birds more often went without food, which may account for their high frequencies of risk-taking behaviors (e.g. stealing, sharing, and victimizing dominants). Older, experienced birds were more successful feeders and weighed more, which established them as dominants and forced younger birds into subordinate roles and behaviors.

**Assessing the Differences Between a Standard Measure of Achievement  
and Teacher Ratings for Bilingual and Monolingual Children**

Lissa M. Mann (Undergraduate) and Dr. Terry A. Cronan

San Diego State University  
Oral Presentation

In our educational systems, a major cause of concern and controversy is the best way to teach English to non-native English-speaking children, and how to test their abilities. Past research has shown that bilingual children score consistently lower than their monolingual peers on traditional measures of achievement (Ruiz, 1985; Figueroa, 1990; as cited in Murphy, 1990, p.1375). Teacher ratings are more comprehensive than standardized tests and are theoretically based on a larger sampling of the domain (Grescham, Reschly, & Carey, 1987). The purpose of the present study was to determine whether monolingual and bilingual children differ in achievement test scores, teacher ratings, or the relationship between the two. Participants were 41 children (8-12 years) of families in Project PRIMER (Producing Infant/Mother Ethnic Readers), a community based literacy intervention project. They were 25 monolingual (English speaking only) and 16 bilingual (English-and-Spanish-speaking) children of low-income families. The Peabody Individualized Achievement Test-Revised (PIAT-R) and the Project PRIMER teacher evaluation form were used for the purpose of this study. Results of ANOVA's and Spearman Rho Correlations show no significant differences or relationships. Although there was no statistically significant difference between monolingual and bilingual children, there may have been inadequate power to detect the difference; the scores of bilingual children were lower than those of monolingual children. Other possible reasons for the lack of differences and implications are discussed. Teachers, investigators, and school psychologists are cautioned about using any one measure as the sole indicator of a child's achievement.

## Cancer Incidence among California Farmworkers

Paul K. Mills, Ph.D.

Cancer Registry of Central California  
Oral Presentation

Although farmers enjoy lower overall mortality and lower overall cancer incidence than the general public, several cancers have been identified as being excessive in this occupational group. Cancers of the prostate, brain, testis, non-Hodgkin's lymphoma, leukemia, multiple myeloma, lip and skin have been found to be elevated in agricultural workers. However, most previous studies have focused on non-Hispanic white farm owner/operators in the American mid-west and have not included large numbers of seasonal and migrant farmworkers.

Farmworkers in California are largely of Hispanic origin, work in a large number of crops that require manual labor and are migratory. They are also exposed to a large number of pesticides, some of which have been shown to be mutagenic and carcinogenic in nature.

In order to evaluate patterns of cancer in farmworkers, a roster of the membership of a large farmworkers union dating back to the mid 1960's was linked with the database of the California Cancer Registry for the years 1988-1996. Results of the record linkage were used to calculate Proportional Cancer Incidence Ratios (PCIR) comparing cancer incidence in the farmworkers union with reference to the total California Hispanic population.

Compared to a PCIR of 100 (the value for the reference population), risk of cancer in the farmworkers were lower for breast (PCIR=76), colon (PCIR= 24) and prostate cancer (PCIR=92). However, risk of brain (PCIR= 136), leukemia (PCIR= 149), melanoma (PCIR= 179), cervix (PCIR=267) and stomach (PCIR= 166) was elevated. PCIRs for leukemia and brain cancer were higher in males than females and the elevated PCIR for leukemia was statistically significant in males ( $p<0.05$ ).

These results suggest a strong "migrant" effect among California farmworkers as well as elevated risk associated with particular agricultural exposures.

## **MKK6 Activation of NFkB in Cardiac Myocytes**

Amy M. Mingo (Undergraduate presenter) and Dr. Christopher C. Glembotski

San Diego State University  
Oral Presentation

The transcription factor NFkB is important for protection against apoptosis in many cell types. Apoptosis, or programmed cell death, is important in cardiac myocytes because it has been suggested to play a role in heart diseases such as arteriosclerosis, myocardial infarction, and ischemia/reperfusion. Recent studies have suggested that cell survival mechanisms initiated by NFkB activity are regulated by members of the MAP kinase pathways. In this study, we investigated the mechanism by which MKK6, an activator of p38 MAP kinase, regulates NFkB activity in cardiac myocytes. NFkB activation by constitutively active MKK6(E) was measured using a NFkB luciferase reporter. It was found that NFkB was activated by MKK6(E) alone, however, reporter activity was decreased only slightly when a p38 MAP kinase inhibitor, SB203580, was used. The partial inhibition by SB203580 suggests that MKK6(E) activation of NFkB does not only occur via p38, but can also occur in an alternative and independent manner. In addition, cotransfection of MKK6(E) and a mutant form of I kB inhibited activation of the NFkB luciferase reporter, indicating that NFkB release from cytosolic I kB is required for translocation of NFkB into the nucleus.

## **Employee Involvement/Empowerment and Quality Indicators**

J. M. Moghaddam

The Sid Craig School of Business, California State University, Fresno  
Oral Presentation

To achieve competitive superiority in today's global environment, a manufacturing firm must use an effective performance measurement system to monitor its progress toward attaining the ultimate goal of customer satisfaction. Employee involvement/empowerment plays a crucial role in success of such a measurement system. The objective of this research survey is to examine the relationships between employee-related characteristics of a performance measurement system and quality-related performance indicators in manufacturing environments. The electronic and other electrical equipment and components industry in the U. S. provided the frame for this study. The responses of manufacturing firms with five hundred or more employees and \$5,000,000 or more annual gross sales were used to complete this research.

This study evaluated, compared, and contrasted seven employee-related characteristics of a performance measurement system and twelve quality-related performance indicators. The study found significant positive relationships between the extent of employee involvement/empowerment and the participating manufacturers' extent of using the quality indicators in measuring their performance. Such relationships were very strong with respect to the extent of employees' being involved in development and updating of measurements, using the measurement results as effective feedback, and perceiving the measurements and their corresponding rewards as compatible.

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

# **Intraperitoneal injections of cyanobacterial extracts into MRL/lpr mice exacerbate symptoms of Systemic Lupus Erythematosus**

**A.V. Mohan, D.G. Cox & S.A. Kovacs**

**California State University Fresno, Department of Biology,  
Graduate Student  
Poster Presentation**

Systemic Lupus Erythematosus (SLE), is a prototypic autoimmune disease with the potential to involve multiple organ systems directly. The etiology of SLE still remains a mystery but, the identification of geographic clusters of SLE in susceptible individuals have supported the idea for a role of infectious agents in the pathogenesis of SLE. Despite the absence of a cellular nucleus, recent investigations in our lab have revealed that U1 small nuclear ribonucleoprotein (snRNP), the frequent target of autoantibodies in human and murine SLE, do exist in a cyanobacterium, *Synechococcus leopoliensis*. This study addresses the question of whether cyanobacterial extracts containing snRNP particles can act as exogenous accelerating factors when introduced into an animal with SLE prone genetic background, namely the MRL/lpr mice.

*S.leopoliensis* cultures were initiated in a 15 liter culture vessel and the cells were harvested in late log phase, crushed in a French Press and the snRNP containing bacterial extracts were prepared by the methods used for HeLa Cell nuclear extract preparation but with slight modifications. 20 MRL/lpr mice, 4 weeks old at the start were involved in the study --10 were inoculated intraperitoneally with 100ul (ug of protein/lul) of bacterial extract and the remaining 10 with 100ul of saline as the control group. A similar immunization protocol was conducted on 20 Swiss Webster mice, genetically random controls for comparison. The mice were examined biweekly for SLE clinical signs of arthritis, hair loss (alopecia) and lymph node hyperplasia. Sera were collected from all the mice bi-weekly via retro-orbital sinus bleeding over the subsequent 12 week period and stored at -70°C for analysis by immunofluorescence assay. After the final bleeding all the mice were sacrificed. Quantification of lymph node hyperplasia was determined by axillary lymph node weight assessment of each mouse involved in the study. The kidneys were snap frozen in liquid nitrogen and stored at -70°C for studies of glomerulonephritis. Cryostat sections (4um) thick were stained with 1: 100 dilution of fluorescein isothiocyanate (FITC) conjugated goat anti-mouse IgG.

Preliminary results are promising. MRL/lpr usually show signs of alopecia after 18 weeks of age. Early alopecia (as soon as 6-7 weeks of age) was observed in 70% of the MRL/lpr mice which received the bacterial extracts. None of the control MRLs or Swiss Websters exhibited this feature. Statistical analysis on the axillary lymph node weights have showed significance at 0.05 level, indicating an increased lymph node hyperplasia for the MRLs which received the bacterial inoculation over those that did not. Preliminary immunofluorescence assays of serum and mice tissue samples were not as distinctive and the signs of arthritis were absent in all mice. It appears that the bacterial extracts have altered the onset and course of some of the symptoms of Lupus in these SLE- prone-mice. If bacteria are shown to be an antigenic trigger for SLE, then new antibiotic treatments might improve the prognosis for SLE patients.

## GOOD PAIRS or BAD PAIRS

(Oral presentation)

**Natália D. Moore** (Graduate Student)  
**Norman Woo** (Faculty Sponsor)

**California State University, Fresno**  
**Department of Mathematics**

One of the most famous problems in mathematics is the Goldbach's Conjecture: can every even integer greater than 4 be represented as a sum of two odd primes? Scientists and mathematicians have always been interested in these representation problems.

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

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

Def 2: The sequence  $[d_1, d_2, d_3, \dots]$  is called a basic sequence whenever  $\{d_1, 2d_2, 2^3d_3, \dots\}$  is a base.

It can be shown that  $b_i = (-2)^{i-1}$  is a base. Hence, its corresponding sequence  $[1, -1, 1, -1, \dots]$  is a basic sequence. We say that the sequence  $[1, -1]$  is a basic sequence of period 2. In general, if we have a sequence of the form  $M, -2N, 2^2M, -2^3N, \dots$  which is basic, then  $[M, -2N]$  is a basic sequence of period 2.

Consider  $S = \{0, 1, 4, 5, 16, 17, 20, 21, 64, 65, \dots\}$  of nonnegative integers whose 4-adic representation does not contain the digits 2 and 3. Then we can write  $x \in \mathbb{Z}$  (all integers) as  $x = Ms_1 - 2Ns_2$  where  $s_1$  and  $s_2 \in S$ .

Def 3: A pair  $(M, N)$  of nonnegative integers is said to be a good pair if it is true that every  $x \in \mathbb{Z}$  can be uniquely represented in the form  $x = Ms_1 - 2Ns_2$ , where  $s_1$  and  $s_2 \in S$ . Otherwise,  $(M, N)$  is said to be a bad pair.

A few basic theorems will be stated. It is the purpose of this presentation to establish some algorithm to check whether a given pair is good or bad. Furthermore, several numerical examples will be given to illustrate the general idea.

## Disturbance of the California Spotted Owl

Patricia Moyer (Undergraduate), Dr. Stephen Ervin (Faculty Sponsor)  
and Tom Munton, USDA Forest Service

Department of Biology, California State University, Fresno  
Oral Presentation

We examined the corticosterone levels of owl fecal pellets stemming from four color banded male California Spotted Owls (*Strix occidentalis*) to establish the disturbance level of select California Spotted Owls in the Central Sierra Nevada. One previous study on the Northern Spotted Owl concluded that corticosterone levels in the owl fecal pellets increase with the level of disturbance the owls are subjected to. The disturbance factors being studied were human activity such as camping, hiking, and proximity of highways (within 0.5 miles) to the nest and roost sites.

The samples were sent to the Center for Wildlife Conservation, Woodland Park Zoo laboratories in Seattle, WA where they were freeze dried, and analyzed for their corticosterone level with use of a 125-I-Radio immunoassay. Two samples were collected from a disturbed site (<0.5 miles from human activity) and 4 samples were collected from 3 undisturbed sites (>0.5 miles from human activity). The collection of samples proved much harder and more time consuming than first anticipated. The limited sample size (6 samples) made comparison between disturbed and undisturbed sites impractical. A high level of corticosterone observed in an undisturbed site may be related to intraspecific competition and/or pair status. An increase in corticosterone levels in an undisturbed site may be related to an increase in human activity in the disturbed site.

Future studies of disturbance effects on Spotted Owls using fecal corticosterone data should take into account the difficulty of collecting fecal pellet samples.

## **Content Analysis: Messages From Magazine Advertisements Reaching Adolescents**

Miwako Murasawa (Graduate)

Department of Mass Communication  
California State University, Fresno  
Poster Presentation

Because of concerns of influence of advertisements on adolescents and young adults, this study was conducted to evaluate use of fantasy and reality, body-as-object and body-as-process, and self-evaluation, self-improvement and self-enhancement in magazine advertisements. This content-analytic study of magazine advertisements that adolescents see found the advertisements to emphasize self-evaluative images.

A total of 759 advertisements were collected and analyzed for use of image and content of text: 260 from women's 'teen magazines (*Seventeen* and *Teen*), 256 from women's magazines (*Cosmopolitan* and *Glamour*), and 243 from men's magazines (*GQ* and *Road & Track*). Men's 'teen magazines were omitted from the sample because the possibility of influence by advertisements in men's 'teen magazines seems minimal, due to the difficulty of finding them in public libraries or local retailers.

Among the sample advertisements, 317 (41.8 percent) emphasized fantasy in the image and 290 (38.2 percent) in the text. In this study, fantasy meant nonexistent things, such as extreme beauty and infinite power, for the general readers. Self-evaluation was emphasized in 468 advertisements (61.7 percent) in the image and 233 (30.7 percent) in the text. Self-evaluation implied messages emphasizing comparisons with models or judgment of oneself. Body-as-object, focusing on body beauty or body parts, was emphasized in 324 advertisements (42.7 percent).

A number of studies have shown that self-evaluative comparisons with models will cause lower self-perception and self-esteem and that the exposure to the body-as-object images may cause adolescents to develop negative attitudes towards themselves. However, advertisers seem not to pay attention to these ideas. To foster advertisers' interest in improving adolescents' media environment, future studies should focus on how fantasy, body-as-object, and self-evaluation affect sales through their influence on adolescents.

## **The Native American Church and the Peyote Religion**

**Bernard Navarro (Graduate) and Dr. Robert Fisher (Faculty Sponsor)**

**Department of Sociology, California State University, Fresno  
Oral Presentation**

The Native American Church and the Peyote Religion continues to inspire the lives of many Native American's in spite of negative stereotypes, untrue depictions, and clear violations of religious freedom. The purpose of this study was to give a detailed understanding of the sacrament peyote and to allow those who are rarely heard the opportunity to explain the significance of this church and how the Peyote Religion has influenced their lives.

This research consisted of three parts. The first was a collection of testimonials. I allowed Native American Church members to explain the significance of peyote and explain how this way of prayer has influenced their lives. In the second part I gave a detailed description and gave meaning to each element of the all-night Native American Church ceremony. This was done by my own observation and with the help of those with the knowledge of this peyote ritual. The third part was a subjective view of attending a Native American Church service. I chose one of the church services attended and documented my own experiences. In addition to providing accurate information, my personal hope is that this study will capture the essence of the Peyote Religion, and show why this way of prayer is sincere and relevant to the revival of the Indian spirit.

## **Confidence Measures as Predictors of Performance**

Kennard Nears (Undergraduate) and Dr. Paul Price (Faculty Sponsor)

Department of Psychology, California State University, Fresno  
Oral Presentation

This study examined the correlation between a task-general and task-specific measure. No one has studied the comparison of a general predictor versus a really specific one. In this study, participants completed a self-efficacy scale and a physical task (a beanbag toss). Before the physical task participants were asked to judge their probability that they will succeed (likelihood judgment). Self-efficacy and likelihood judgment had approximately the same correlation with the successful beanbag tosses, but the correlation between self-efficacy and the mean likelihood judgment had a lower correlation. This study demonstrates that one can predict how well someone will do on a particular task just as well from knowledge of his or her general self-efficacy score as from knowledge of his or her specific likelihood judgment. The relatively low correlation between self-efficacy and likelihood judgment showed that they are measuring different elements in predicting performance.

## **Adult Attachment Style and Physician-Patient Interaction In The Medically Underserved**

Ronda Niederhauser, M.A. (Doctoral Student)  
California School of Professional Psychology

David Nowlis, Ph.D.  
Family Practice  
UCSF-Fresno Medical Education Program

### **Poster Presentation**

Do adult attachment styles affect behavior in medical settings? We looked at this question in a medically underserved sample. Our study: (1) investigates the influence of patient attachment styles on patient-physician interaction and on medical adherence in three primary care clinics for the underserved; (2) compares the attachment styles of these medically underserved patients with a nationally representative sample; and (3) extends previous research on the effects of adult attachment styles on psychosocial functioning to this population. 123 patients from three primary care clinics for the medically underserved completed a structured interview discussing their attachment styles, relationship with their primary physician, medical adherence, and other psychological and social variables. Patients with insecure attachment styles rated their relationship with their physician less positively than patients with secure attachment style. Patients with insecure attachment styles also reported more problems with medication adherence. Compared to a nationally representative sample, the clinics we sampled had a lower than normal percentage of people with secure attachment style. Patients with insecure attachment styles also reported less contact with friends, fewer people living with them, more cynical distrust, more depression, lower incomes, and were less likely to be married or living with a significant other. Further research is needed to clarify the implications of our findings for the medical community. The high percentage of insecure attachment styles among medically underserved patients may complicate their care. Further research may suggest ways to improve patient- physician relationships and medical adherence in patients with insecure attachment styles.

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## **Proper Utilization of Child Passenger Restraints In Fresno City: Most Common Errors**

Pouran Nowzari-Sohrabi, Ed.D, MSPH, CHES  
Human Services System, Dept. of Community Health

Melanie L. Shouse, MSPH  
California State University, Fresno

### **Oral Presentation**

**Introduction** - In 1997 three children under age four were killed and 97 injured in motor vehicle accidents, in Fresno County. More than two-thirds of the deaths and injuries could have been prevented if the children were properly restrained. Improper use of child restraint is estimated to be 90 percent in the United States as well as California. The purpose of this study was to assess the misuse of child restraints in Fresno City and to effectively focus educational efforts.

**Methods** - On February 1999 a total of 106 car seats were checked during a two day period (8 hours total) by three teams of trained Child Passenger Safety Specialists. An assessment tool was utilized to gather information on proper car seat usage.

**Results** - The most common errors found in the infant and toddler seating position were: restraint not tightly secured in the car (74.4% & 78.6%), harness straps coming from inappropriate slots (23% & 41%) and loose straps (30.8% & 21.4%) respectively. Added cushioning (38.5%), carrier handle unlocked & locking clip in incorrect position (12.8%) were additional common errors with infant 'seating position. Frayed or torn straps (16%) and seats not in upright position (14.3%) were additional common errors with toddler seating position. Most common errors with booster seats included incorrect use of locking clip (27.3%) and improper routing of vehicle belt (18%). The overall improper usage of all child restraints checked (91.5%) is consistent with California statistics.

**Conclusions** - The preliminary results indicates the need for developing a detail curriculum focusing on the most common errors. This will increase parents' and professionals' knowledge on correct utilization of various types of child passenger restraints.

## **Detection of Nuclear DNA Degradation During Sexual Determination in Corn**

Anthony Nungaray (Undergraduate)  
Tanya Carroll (Undergraduate)  
Dr. Alejandro Calderon-Urrea

Department of Biology, California State University, Fresno  
Oral Presentation

Apoptosis is a type of programmed cell death (PCD) in animals, which results in the death of a cell. One of the hallmarks of apoptosis is the organized degradation of the nuclear DNA. Apoptosis has been studied with the TUNEL assay, which labels 3'-OH ends produced as a result of DNA degradation. PCD is also important during plant development. In corn, sex determination is accomplished through the regular degeneration of organ primordia of the opposite sex within the appropriate structures--tassel (male flowers) or ear (female flowers). It has been suggested that nuclear DNA degradation is involved in this degenerative process. Our studies have focused on the detection of DNA degradation during the programmed cell death that occurs in male flower formation. Using two *in situ* staining techniques, acridine orange fluorescence and the TUNEL assay, we studied the development of immature tassels from wild type and *tasselseed2* mutant plants. The acridine orange fluorescent staining technique allowed us to detect the absence of nuclear DNA in degenerating wild type gynoecium primordia. Furthermore, we were able to show, by using the TUNEL assay, that this loss of nuclear DNA is due to a highly controlled DNA degradation process. Conversely, in *tasselseed2* mutant plants, no nuclear loss is observed in developing gynoecium while stamens showed staining with the TUNEL assay. Our results further support the idea that gynoecium degeneration during male flower formation and subsequent programmed organ death is a result of the action of the *TASSELEED2* gene and that it involves DNA degradation. Whether or not this was an apoptotic event has yet to be determined.

## **Charlotte Smith and the Romantic Canon: Where do Women Belong**

Lacee O'Brien

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Oral Presentation

The poet Charlotte Smith (1749-1806) who wrote her major works at the start of the Romantic period has never been included within the canon even though the concepts of nature, symbol and myth within her poetry were heavily influential to the later Romantic poets. The exclusionary nature of canonical Romanticism has become problematic within the debate to determine the place of women in the canon. Critics argue that the construct of a poetic identity, of which Wordsworth was the most ardent champion, was impossible for a woman to create due to the pressures of patriarchal society. The current definitions of authorship and individuality, however, which center on a Wordsworthian model ignore the many other alternative aspects of the literary self which existed during the Romantic period.

This study aims to define the themes of Smith's poetry, the characteristics of her world-view, and its relation to current romantic ideology. Through Smith's poetry I will show how, in order to deconstruct the Romantic canon, one must shift the perceptions of the self from an over-riding narcissism and centrality into one of a more inclusionary selfhood which does not use dominance or appropriation as models of poetic identification.

The conclusion of the study shows how the dialectic of Freudian and feminist criticism impairs critical inquiry into marginalized writers. It shows how Smith in a non-polemical identification with nature created her poetic voice. Finally, it will suggest a new ideological discourse within canonicity which may be approached from revisionist position.

## Downsizing in Academe: Nightmare or Nirvana?

Victor G. Panico  
Jerry L. Jones

Management Department, Craig School of Business  
California State University, Fresno  
Oral Presentation

What impact has downsizing had on academic programs? This case study examines the cost-benefits of reducing a senior seminar from four to three-semester units. It considered the impact of downsizing on student learning, teaching load, and administrative costs and benefits.

The course studied was a senior-level seminar in applied management techniques developed 11 years ago to meet the needs of the marketplace. The course teaching methodology included experiential exercises; lectures, scenarios; individual and group presentations; professor and student led discussions, simulations, and training films.

The case-study analysis revealed that the 25 percent reduction in student contact time most adversely affected the time devoted to simulations and other experiential exercises while time devoted to a number of other class activities was severely curtailed. As a consequence, classes were required to focus more on the essence of the subject matter. For professors, although the time required by the class was reduced by 1 hour per week, their in-class time increased by 20 percent because of an anomaly involved with a 12-hour teaching load and generally standard 3-unit classes. This increase also led to an additional class preparation that greatly increased their overall teaching load. Administratively, four-unit classes were found to be administratively inefficient in both staffing and facility utilization.

The authors conclude that four-unit classes in a predominantly three-unit teaching environment are inefficient in terms of student learning, staffing and facility utilization. They also conclude that students are better served by three-unit classes that provide greater breadth rather than depth.

**Determination of the Site of Vitellogenin Synthesis in the Ridgeback Shrimp,  
*Sicyonia ingentis***

Ray Pooyan  
Chris Holford  
Brian Tsukimura

Department of Biology, California State University, Fresno  
Oral Presentation

Within decapod crustaceans, a long-standing controversy exists regarding the site of synthesis of the yolk protein precursor, vitellogenin (Vg). Previous studies have suggested that the site of synthesis of Vg is either the hepatopancreas (Hpt) or the ovary. Standard molecular biology techniques were used to determine the site of synthesis of Vg. A 30mer oligonucleotide degenerate probe was synthesized from the known partial amino acid sequence of the *Sicyonia ingentis* 182 kDa vitellin subunit. Total RNA, isolated from the Hpt and ovary of stage IV-V vitellogenic female *S. ingentis* was prescreened with the degenerate probe to isolate Vg-specific mRNA. Complementary DNA (cDNA) expression libraries, constructed from the isolated mRNA, contained  $1.6 \times 10^6$  and  $1.2 \times 10^6$  recombinants/ $\mu$ g for the Hpt and ovary, respectively. After screening with a species-specific anti-Vn antibody, immunoreactive clones were detected in both the Hpt and ovary expression libraries, suggesting that Vg is synthesized in both tissues. Characterization of the immunoreactive clones isolated from both tissues indicated the presence of a single cDNA band 2.9 kilobases in size. These clones are believed to be the Vg cDNA. The isolated cDNA band was sequenced to obtain the first partial Vg gene sequence from any crustacean species. This work was supported in part by California Sea Grant # NA36R-GO-537, CSU Research Award, and CSU Fresno, ASI.

## **Substance Abuse, Attention Deficit Disorder, and Comorbid Conditions**

Jana L. Price-Sharps, Matthew Sharps, Sandy S. Martin  
Department of Psychology, California State University, Fresno

Linda Webster, Sanford Dietzen  
University of the Pacific Stockton

### **Oral Presentation**

Links between attention deficit disorder (ADD) and substance abuse have been suggested based on work with referred clinical populations. The present research explored this possible link in a nonreferred population, an entire high school class in a local school system. Standardized instruments were used to address the relationship of attention deficit disorder, substance abuse, and theoretically related comorbid conditions. The instruments employed were the Brown ADD Inventory, the Substance Abuse Subtle Screening Inventory, and the Minnesota Multiphasic Personality Inventory. It was shown that ADD was a strong significant predictor of substance abuse behavior, as predicted. It was also shown that substance abuse was related to elevated levels of depression and paranoia as measured by MMPI scales. Interestingly, elevated scales indicating conduct disorder were not present as they typically are in referred populations, indicating that this may be more an artifact of population than condition. Results indicate that in the general adolescent population, ADD contributes to substance abuse behavior, and that these in turn are related to pathological conditions which may tend to exacerbate this behavior.

## **The Etiology of Pyromania: Misconceptions and Realities**

**Candy Pulley** (Undergraduate) and Dr. Eric Hickey (Faculty Sponsor)

Department of Criminology, California State University, Fresno  
Oral Presentation

Firesetters as a group cause millions of dollars worth of damage. According to arson statistics from the Bureau of Alcohol, Tobacco, and Firearms (ATF), firesetters destroyed over \$350,000,000 worth of property, killed 49 people, and injured almost 200 people in 1995. Pyromaniacs represent less than two percent of all firesetters, but set over twice as many fires as arsonists. For example, Mr. B, a pyromaniac in this study, would impulsively set over five fires a day. An arsonist, however, would carefully plan and set approximately 1-2 fires in a month.

This study looks at the similarities and differences between firesetters and pyromaniacs. It also discusses the various definitions or uses of the term pyromania, and ultimately creates a sub-classification for sexual-pyromaniacs.

**Geologic Influence on Nitrate Occurrence in Groundwater in the  
Arvin Area, Kern County, California**

E. Clifford Raley and Dr. C. John Suen

Department of Geology, California State University, Fresno  
Poster Presentation

Available data indicate that elevated nitrate concentrations have been detected in groundwater samples from the Arvin area of Kern County since the mid-1960s. When these data are plotted on a map, two distinct groups are apparent. High nitrate concentrations are common in the eastern group, while the water quality of the western group appears excellent with respect to nitrate concentrations.

In this study, a portion of the San Joaquin Valley south of the Kern River was modeled using a computer simulation program, Visual MODFLOW (Waterloo Hydrogeologic Inc., v. 2.61, 1995-1997). The purpose was to determine if the computer model would predict high nitrate occurrences similar to observed data found in the Arvin area. The results of the modeling effort support the conclusion that high nitrates in the study are the result of infiltrating agricultural irrigation water, and that the pattern of nitrate occurrence is strongly influenced by the area's geology.

## **Youth Accountability Board Research Project**

Eric Renshaw, B.S.  
Jane Younglove, M.S., J.D.

California School of Professional Psychology  
Oral Presentation

The following research project evaluated the effectiveness of Fresno County Probation Department's Youth Accountability Board, the reoffense rates of four groups of first-time juvenile offenders were compared: (1) those who completed their contracts; (2) those who did not complete their contracts; (3) those who were rejected by the program as inappropriate; and (4) those who declined to participate in the program. The study evaluated the records of 317 juveniles that included 57 percent males and 43 percent females. If the is meeting its goals, then the reoffense rates of juveniles in the first group would be lower than the rates for any of the other three groups. Results indicated that 15 percent of those that completed the program had reoffended. The analysis also showed that 46 percent of those that did not complete the program had reoffended.

## **Predictors of Children's Academic Achievement**

Sergio Romero (student) and Terry A. Cronan, Ph.D.

San Diego State University  
Oral Presentation

The purpose of the present study was to identify maternal and family characteristics that are associated with children's achievement. Participants were 82 low-income families recruited from local Head Start programs. The Peabody Individual Achievement Test - Revised (PIAT-R) was used to measure children's achievement. The PRIMER Parent Questionnaire was used to collect demographics and evaluate maternal characteristics. Mothers were administered the Parent Questionnaire at the pre-assessment visit, and Head Start children over 8 yrs. old were administered the PIAT-R at the yearly follow-ups. Multiple regression analysis showed that mothers' education, reading attitudes, and depression predicted PIAT-R scores ( $p < .05$ ). Interventions that help parents cope with negative characteristics (e.g. depression) and promote positive attitudes about school should be implemented.

## **Interactions of Visual and Semantic Information in the memory performance of Young and Older Adults**

Matthew L. Sharps, Sandy S. Martin,  
Michael A. Nunes, and Michelle Merrill

Department of Psychology, California State University, Fresno  
Oral Presentation

Recent research indicates the presence of an age-related visual processing deficit, for which the elderly may attempt to compensate through the use of relational information. This hypothesis was tested. In studies of young adults, the *category superiority effect* (CSE), the fact that items grouped by category tend to be remembered better, has been shown to be confined to relatively abstract stimulus materials, such as verbal items, and to be absent for pictures. It has been shown that a significant CSE is present in elderly adults both for verbal and for pictorial stimuli, since the elderly are suggested to utilize category information to compensate for imageric deficits. The present study stressed the memory systems of young and older adults by using more categories of stimulus items (ten) than have been used previously (four) in a study of free recall. It was shown that the additional stress resulted in similar CSE's for both young and older adults. This result indicates that the ability of older adults to use category and relational information to support their recall is much stronger than has previously been suggested, and provides support for the compensation hypothesis advanced above.

This research was supported by grant AG11605 from the National Institute on Aging, and by a grant from the School of Natural Sciences, California State University.

**Towards Genetic Linkage Maps of *Clarkia lingulata* and *Clarkia biloba* ssp.  
*australis***

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**Oral Presentation**

*Clarkia lingulata* (Onagraceae) grows in only two known populations in the Merced River drainage, Mariposa County CA, and is hypothesized to be a derivative of *Clarkia biloba* ssp. *australis*.

*Clarkia lingulata* (n=9) is a simple morphological variant of *C. biloba* ssp. *australis*, with unlobed versus bilobed petals. It is within the ecological range of *C. biloba* ssp. *australis* (n=8). Chromosomally it differs from *C. biloba* ssp. *australis* by a reciprocal translocation, a paracentric inversion and a tertiary trisomic.

Randomly amplified polymorphic DNA (RAPD) analysis is being used to construct genetic linkage maps for the two species. Experimental families were created from seeds from the natural populations. Of the fifty primers screened on the parents of the experimental families so far, twenty-nine percent have yielded polymorphic markers between the species. One polymorphic marker has been identified between the two populations of *C. lingulata*. No polymorphic markers have been identified within the samples of *C. biloba* ssp. *australis*. Additional primers are being screened against the parental population and a subset of F<sub>1</sub> progeny. All polymorphic markers will be screened against the F<sub>1</sub> and backcross progeny. From the observed segregation ratios, linkage maps will be constructed using Mapmaker/EXP 3.0. These maps then can be used as a base in research to identify the regions of the *C. biloba* genome that were involved in the reciprocal translocation, the paracentric inversion and the tertiary trisomic.

## Effects of an Anti-Bacterial Drug and Anti-Oxidants on Grafts

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Oral Presentation

Surgeons graft skin in a number of situations that require coverage of defects. Common problems affecting grafts (of which skin flaps are a specific type) are ischemia, hematoma, and infection. This study was conducted in order to examine another possible pathway affecting graft life- the production of free-radicals at the surgical site. A number of studies have found that management of free radicals may increase tissue survival. This study was conducted to examine the effects of an anti-oxidant and an anti-bacterial drug on skin flaps.

Research subjects were male Sprague Dawley rats. A 3 by 12-centimeter McFarlane flap was created and anchored. Rats were given intraperitoneal injections of an anti-bacterial drug diaminodiphenyl sulfone (dapsone) at 5, 50, and 100 mg/kg/day. The injections were started 3 days before flap creation and continued for 9 days post. The carrier for dapsone was either peanut oil or dimethyl sulfoxide (DMSO), a known anti-oxidant. On the 9 th day following flap creation, flaps were evaluated for viability.

Flap survival was significantly increased by DMSO alone, but not in combination with higher doses of dapsone. Peanut oil alone did not significantly increase flap survival. Lower dose combinations of dapsone and DMSO showed increases in flap survival but were probably due to the anti-oxidant properties of DMSO.

The survival of skin flaps depends on a number factors but the management of free radicals at the site seems to be an important consideration. In this study we have seen that a reduction of free radicals can lead to significantly increased flap viability. This could have implications for specific grafting procedures.

## Should Incompletely Excised Basal Cell Carcinomas Be Re-excised?

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Sohrabi, Karim:MD, MPH,  
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Oral Presentation

Introduction: It has been shown that frequency of residual BCC in re-excised specimen is as low as 7% (Sarma 1984); this questions the necessity of re-excision of incompletely excised BCC. We reviewed the chart of 133 patients who had re-excisions of BCC for incompletely excised BCC and tried to identify the frequency and various factors related to residual BCC in re-excised specimen.

Patients and methods: Charts of 133 patient with re-excision of BCC were reviewed. Site, size, margins, surgeon, histopathology type, and residual BCC in the re-excised specimen were recorded. Using Microsoft Excel, this data was analyzed. The above factors were mashed against the residual BCC in the re-excised specimen using the Chi square test. The p value of .05 or less was considered significant.

Results: The frequency of residual BCC in re-excised specimen was 60%. Site, size, histology of BCC, surgeon performing the operation did not correlate with residual BCC in re-excised specimen. However, involvement of lateral margin was significantly correlated with residual BCC in the re-excised specimen. There was a 72% chance of residual cancer in re-excised specimen when lateral margin of primary excision was involved.

Conclusion: In our study 60% of re-excised specimen contained residual BCC and, when lateral margin was involved, this figure increased to 72%. Based on our findings and over-all review of literature, we recommend immediate re-excision for all incompletely resected BCC of skin.

## **Improving Access for Non-Ambulatory Students to Outdoor Field Trips**

Randy M. Steiner (Undergraduate student, Liberal Studies),  
Dr. Roland H. Brady III and Craig C. Pool (Technician)

Department of Geology, California State University, Fresno  
Oral Presentation

During a recent Geology field trip to Death Valley, I (a T 2\3 paraplegic, non-ambulatory student) experienced a number of obstacles to maximizing participation in the class activities, most notably: wheelchair access to and from the van; irregular ground conditions; and sleeping arrangements. The purpose of this project is to design and test equipment and techniques that will enhance the access, safety, and comfort of non-ambulatory students during outdoor-oriented field trips.

Initially, moving between the van and wheelchair involved bodily lifting and lowering me. We designed a prototype wooden ramp (cost \$70) that attaches to the step on the sliding side door and raises the wheelchair to the height of the van's seat, allowing an easy transfer to the bench seat inside. The ramp is secured with a steel strap, and has a hinged flap on its lower end to facilitate entry from uneven ground. When underway, the ramp folds compactly on the vehicle's floor.

When at the field trip site, we found that by allowing the student a larger tent can provide privacy, safety, and comfort. For shower needs, we include the student's shower chair. When there are uneven ground conditions, we found it is best to have removable all-terrain wheelchair tires.

We have accomplished our goal for non-ambulatory students. Preliminary testing has been achieved. Final testing will be done by me on the upcoming field trip to Death Valley. Now, non-ambulatory students can share in the adventure, and have invaluable social interactions with other students and the environment.

**Theoretical Model for Apparel Design Curriculum:  
Fit Satisfaction, Body Cathexis, and Creativity**

Elizabeth Swearingen (Graduate)  
Dr. Nina Dilbeck (Faculty Advisor)

Child, Family, and Consumer Sciences, California State University, Fresno  
Oral Presentation

High rates of fit dissatisfaction with ready-to-wear garments and commercial sewing patterns are consistent across all size ranges and figure types for women. Women are quick to blame their bodies rather than poor product design when ready-to-wear doesn't fit. Unrealistic cultural ideals of thinness serve to reinforce widespread body image distortion fueling feelings of shame, frustration, anger, hunger, and depression in women. The implication is that if clothing influences body perceptions it can be used to improve self image.

The objective of this comparative study was to: (a) determine if active participation in apparel design education has any affect on fit satisfaction, body cathexis, and creativity, and (b) evaluate a specific apparel design curriculum and instructional process. A convenience sample of 16 adult women were recruited from four women's organizations in Fresno County, California to participate in a 6-week apparel design course.

Quantitative analysis used dependent t-tests and a pre-post test design to measure three dependent variables: fit satisfaction, body cathexis, and creativity. The independent variable was time from pre- to post test in which sample participated in apparel design curriculum. Results demonstrated: (a) a significant increase in total mean fit satisfaction, (b) a significant increase in abdomen and buttocks body cathexis, and (c) no significant increase in total mean creativity. Qualitative analysis used an open-ended questionnaire to evaluate the curriculum and instructional process. Responses offered positive encouragement that apparel design education can improve fit satisfaction, body cathexis, and creative self expression through the medium of clothing design.

## Correlation Between Color Gradient and Mass Segregation in M30

Amy Tan (Undergraduate Student) and  
Dr. Puragra Guhathakurta (Faculty Mentor), University of California, Santa Cruz

University of California, Davis  
Oral Presentation

The only distinguishable features among stars in a globular cluster are its mass and color. Recent images taken from the Hubble Space Telescope reveal that bluer, more massive stars concentrate near the center of the cluster whereas redder, lighter stars linger along the perimeter. This color and mass distribution with radius has lead astronomers to hypothesize that the separation of mass may be correlated with the variation of color. Our objective was to quantitatively verify this prediction, using M30 as a case study. Three methods were employed: the Fokker-Planck model, the power law mass function, and the Kind model. Surprisingly, our calculations show that mass segregation of main-sequence stars does not produce the expected color gradient.

## **Social and Psychological Factors Associated with Low Birth Weight Outcomes in African-American Women**

Michelle Thomas, MD

R. Tony Brown, MD

Wendy Brox, MPH

Andrea Lourie, PhD

UCSF-Fresno Family Practice Residency  
University Medical Center  
Poster Presentation

**Purpose:** African-American women have a 13% low birth weight risk (LBW), twice the overall rate. This study will ultimately relate social and psychological factors to LBW outcomes. Descriptive data from our first 44 cases is presented here.

**Methods:** This is an ongoing correlational study of African-American women who completed a California Comprehensive Perinatal Services Program initial assessment interview at one of three local obstetrical offices and delivered in 1997-1999.

**Results:** Three of 44 (7%) delivered LBW infants (< 2500 g). Mean age of the entire sample was 23 years (s.d.=5.3); 83% lived in the community over 5 years; this was a first pregnancy for 29%; 45% were students; 62% were unemployed; and, 34% lived with an adult relative. Eighteen percent of mothers and 9% of fathers were unhappy about the pregnancy. Unplanned pregnancies were 75%, 73% of these used no birth control. Fifty-six percent "sometimes get depressed," 16% reported physical and/or sexual abuse, and 2% reported their housing as unsafe and inadequate. During pregnancy, 11% used tobacco, 8% drank alcohol, and no one admitted current illicit drug use. All of the 3 LBW births were unplanned, weights were 371-2457g, and maternal ages were 22-26.

**Conclusions:** These preliminary findings describe a young, unemployed, geographically stable population. Most pregnancies were unplanned and birth control was infrequently used. Although not statistically significant, the early trend is toward a smaller than expected frequency of LBW babies. Analysis of the complete data set will explore associations between social and psychological variables and LBW outcomes.

**Prenatal Health Care Behavior and Female *Maquiladora* Workers in  
Tijuana, B.C.**

Victor M. Torres, Ph.D.

California State University, Fresno  
Oral Presentation

This research examined the utilization patterns of prenatal health care services among a group of women residing along the U.S.-Mexico border by specifying the health care decisions made during the course of their last pregnancy. Specifically, this research focused on the prenatal health care behavior of a particular group of women -- *maquiladora* women, i.e., women working in foreign-owned industrial factories in Tijuana, B.C. The goal was to develop a model that described how external factors (e.g., structural barriers to health care services) constrain choice behavior as well as how personal choice behavior operates in the context of these constraints.

This study examined the process by which this group of women selects prenatal care among a set of prenatal health care alternatives. By a number of different methods *maquiladora* women's prenatal health care decision-making was assessed. The combination of ethnographic and systematic data collection techniques yielded data that provide a better understanding as to how this group of women goes about choosing among a set of prenatal health care alternatives. In-depth, face-to-face ethnographic interviews were conducted on a sample of 37 women who were employed in a *maquiladora* at the time of the study. The use of frame elicitation in the form of paired-comparison questions also proved useful in drawing out specific considerations that guide and inform the women in their prenatal health care choice-making.

The model developed specified four specific considerations that this group of women consider when making prenatal health care choices: 1) emergency situations; 2) privileges (access) to specific health care systems; 3) the ability to pay for medical services up front; and 4) proximity to health care sources.

In sum, the results illustrate that issues related to access, cost, and quality of care, i.e., structural factors, constrained and determined this group of women's prenatal choices more than personal perceptions or beliefs about pregnancy and biomedical prenatal care services.

**The PreTeacher Assessment Center at California State University, Fresno:  
Preliminary Findings from a Study of a Work in Progress**

Walter J. Ullrich, Curriculum, Teaching and Educational Technology  
Helen Kennedy, Educational Research, Administration, and Foundations

California State University, Fresno  
Oral Presentation

The PreTeacher Assessment Center grew out of a need to provide preservice teachers with a diagnostic assessment of their potential teaching skills. Four simulations were designed to assess the strengths and weaknesses of CSUF's prospective teachers across twelve skills or dimensions considered essential for effective, critically-oriented teaching. At this presentation, we will distribute overviews of the Center's implementation this year, including descriptions of the dimensions underlying effective and critically reflective teaching as well as the simulations used to assess these dimensions. Findings from research on the pre-pilot phase and preliminary findings from investigations of the pilot phase of this project's implementation will then be discussed.

The objectives of our investigations of the Center's "pre-pilot" and "pilot" phases were to answer the following questions: (1) How reliable were the school- and university-based assessors who scored the simulations after being trained at the Center this year? (2) What scores did a representative sample of CSUF's prospective teachers receive on the two simulations implemented at the Center this year? (3) How well do CSUF preservice teachers compare to those from other campuses on selected dimensions of teaching? and (4) What are the relationships between selected diversity variables (e.g., gender, race/ ethnicity, language facility, experiential background) and various dimensions of teaching?

Statistical analyses of the pre-pilot study, including frequency measures, one- and two-way ANOVAS, and t-tests, reveal the following findings: (1) tests of assessor scoring reliability show no significant difference between any of the assessors in either of the simulations; (2) interns currently teaching were slightly above the mean in 9 of the teaching dimensions; single-subject students in initial student teaching were slightly above the mean in 4 dimensions, above the mean in 1, and below the mean in 1; multiple-subjects and single-subjects students at the beginning of their professional coursework were near the mean in 2 dimensions and above the mean in 4; and (3) preservice teachers at CSUF score slightly above students in 4-year preparation programs in the leadership, sensitivity, and innovativeness dimensions of teaching. Statistical analyses of the pilot study that bear on the four research questions identified above are currently underway. Preliminary findings will be ready by April 16th, the date of the presentation at the Twentieth Annual meeting of the Central California Research Symposium.

## The Last Breaths of a Minority Language!

Dr. Atilano A. Valencia

School of Education and Human Development, California State University, Fresno  
Oral Presentation

This paper presents one aspect of a comprehensive study I am pursuing on the acculturation of the Hispanic population in New Mexico--the Spanish language and linguistic elements traceable to the communication system of their ancestors, and the influence of other language and linguistic features in shaping their total communication system. One can conceivably predict the eventual extinction of early Spanish among descendants of the early Hispanic settlers in New Mexico, but one cannot readily forecast the disappearance of Spanish (*per se*) in New Mexico and in other parts of the nation due to the continuing influx of new Spanish-speaking immigrants from other countries.

A study of the descendants of early Hispanic settlers in New Mexico includes reference to two historical periods. The first pertains to the Hispanic period prior to the Treaty of Guadalupe Hidalgo (1848), and the second refers to the American period beginning with the Treaty of Guadalupe Hidalgo and beyond. For the purpose of this study, particular reference is given to the latter period. To facilitate the classification of descendants in terms of generations based on the Treaty of Guadalupe Hidalgo as a reference point, each generation is configured in accordance to 25 years of birth dates per generation. Based on this estimation, the first generation of Hispanic American citizens was born between 1837-1862. This generation and their living ancestors were granted American citizenship on the basis of the Treaty. It follows that the second generation was born between 1863 and 1888, the third between 1889 and 1914, the fourth between 1915 and 1940, the fifth between 1941 and 1966, and the sixth between 1967 and up to the year 1992.

The fourth generation of Hispanics in New Mexico, born between 1915 and 1940, represents a population that has experienced relationships with at least five generations of descendants traceable to the first Hispanic American citizens in this geographical area, which include their children, grandchildren, parents, grandparents, and peers. For this reason, the cultural characteristics of this generation of Hispanics in New Mexico serve as a viable source in studying the acculturation of Hispanics in this geographical region. This paper focuses on one aspect of the cultural characteristics of Hispanic people in New Mexico--the Spanish language and related linguistic elements traceable to an earlier Spanish version used by their ancestors. It also includes linguistic features from other languages that influenced their total communication system.

The method of investigation included three approaches. The first approach was simply based on the review of literature on the description of early Spanish found among contemporary New Mexicans--including the adoption of "hispanicized" words derived from the Nahuatl language in Mexico and American English, as well as some words and expressions borrowed from a deviant and expressionistic (*pachuquismo*) dialect created by a group of young Mexican Americans in Texas known as the "Tirilones." The second approach was based on past and recent conversations with members of these generations; and the third approach was based on conversations with other bilingual educators from New Mexico concerning particular words and linguistic features in New Mexico Spanish that deviate from modern (prescribed) Spanish.

Based on my investigation of the Spanish and other related expressions used by at least four generations (third, fourth, fifth, and sixth) of Hispanics in New Mexico, I have been able to determine the degree of reference given to the native language by members of each of these generations. In reference to the analyses and findings in this study, I also have been able to predict the time in the Twenty-First Century when the last remnants of early Spanish in New Mexico will disappear. The conclusions in the study include this particular prediction.

## **Connecting William Faulkner and William James Through Time**

**Beatrice Valenzuela (Undergraduate) and Dr. Chris Henson (Faculty Sponsor)**

**Department of English, California State University, Fresno**  
**Oral Presentation**

In many of William Faulkner's works the concept of time and reality may appear difficult to understand. This difficulty diminishes when one understands the method the author uses. This method becomes evident when one examines William James' pragmatic theory of truth. Although there have been many studies to explain the relationship of consciousness and time in Faulkner's works, none has studied the similarities that exist between the philosophical teachings of William James, truth and pragmatism, and how Faulkner interprets time and reality in some of his major works such as *Light in August* and *Absalom, Absalom!*

**Least Restrictive Environment ? –  
Self-Concept of Deaf High School Students in Different Settings**

Susan van Gurp, PhD.

Communicative Sciences and Disorders  
California State University -Fresno  
Oral Presentation

With the move toward de-segregation of all exceptional students, more deaf students are being mainstreamed and many segregated schools have closed. Resource programs located in regular schools continue to grow and new programs, such as the "congregated" setting, have been established. Previous research examining self-concept of deaf students in different school settings is more than 15 years old and used measures based on a uni-dimensional theory. The purpose of this study was to examine the effects of different educational settings on the academic and non-academic self-concept of deaf secondary students.

Sixty-two profoundly deaf students from segregated, congregated and resource programs participated in the present study. The Self-Description Questionnaire- 1 (Marsh, 1986) was used to measure self-esteem and seven dimensions of self- concept. Because it was developed for hearing students, the test was linguistically modified and supported with an American Sign Language video of all the test items. To identify school setting effects, the data were analyzed using multiple regression. The results indicated that attending the resource programs predicted higher scores in self-concept of mathematics, general school abilities, and parent relations while attending the segregated setting predicted higher scores in self-concept of peer relations, physical appearance, and self-esteem (general feelings of self-worth). No advantages in attending the congregated setting were identified. However, it is possible that the recent move from relatively small segregated setting to a very large secondary school, where they are a small minority, may have had a negative impact on this group of deaf students.

## **Investigation of a Simplified Test for the Adhesion of Fiber Composite Materials in Concrete Seismic Retrofitting**

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Oral Presentation

External reinforcement with fiber composite materials is gaining increasing acceptance as alternative in the retrofit and repair of reinforced concrete structures subjected to seismic forces. Currently, however, there is no standard method to determine the bond and adhesion between the fiber composite and the concrete. Most of the available information deals with the bond, in the form of friction and adhesion, of internal reinforcement. In external reinforcement, however, bond relies exclusively in the adhesion component and the integrity and safety of the retrofitted concrete structure solely depends on the characteristics of that adhesion.

A simplified test was developed to determine the characteristics of adhesion between fiber composites and aged concrete. The test consists of applying a double shear action at the interface of three concrete cubes attached to each other with the fiber composite material of concern. The adhesion test specimens are prepared by fabricating sets of cube specimens with the concrete in question allowing them to hydrate and cure to the required compressive strength. Afterwards, one of the surfaces in each of three specimens is prepared in a way similar to the way it will be done in the field. Three specimens then are glued together with the fiber composite material of interest applied at the prepared surface. The three cubes perfectly aligned form a specimen that, after the resin in the composite is cured to the manufacturer-specified conditions, is ready to be tested under double shear stresses. As part of the test, the applied load and deformation are electronically recorded in a computerized data acquisition system and a complete record of the adhesion (shear strain-shear stress behavior) is obtained.

The simplified test can be conducted relatively easily in the laboratory utilizing samples of the materials to be used in the field in a particular project of seismic retrofit or repair. The test can easily be used to determine in advance the compatibility of different fiber and matrix materials as well as concrete of different properties. It can also be used to estimate the effects of environmental exposure that may affect the concrete structure in the field after it has been retrofitted. For instance, in the validation phase of this project, the effects of high temperature, freezing-thawing, sea-water exposure, and others were easily evaluated.

## **The Effect of Metaphors on the Social Perception of Rape**

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**Oral Presentation**

This study evaluated the effect of metaphors on the social perception of rape among college students. Participants consisted of 222 students enrolled in an introductory psychology course at California State University, Fresno. Students were asked to answer a series of questionnaires in groups of 25. The first questionnaire pertained to prior criminal victimizations. Participants then read one of nine vignettes, which all contained a mock interview with an incarcerated rapist. The vignettes either portrayed one of eight metaphors or a control as the offender attempted to justify his crime. A questionnaire was then answered to assess Weiner's attributional concepts of internality, controllability, responsibility, anger, pity, and blame. It was hypothesized that the metaphors would be viewed as mitigators in the crime of rape in terms of Weiner's concepts, and that the absence of such metaphors would make the offender's actions appear to be more internal and controllable, which in turn would make him more responsible. The results were analyzed using a MANOVA and descriptive statistics. It was found that although the general presence of metaphors did not affect perceptions of the victim or offender, certain metaphors did have an effect on certain variables. It is possible that abstract metaphors are too complex to incorporate into attributions of human behavior, but overall, more research needs to be done in this area before any conclusions can be drawn.

**Use of a PCR Reverse-Genetic Screening Technique for the Identification  
of a Mutation Of *At-Dad1* from *Arabidopsis thaliana***

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Oral Presentation

The *At-Dad1* gene is suspected of protecting cells in *Arabidopsis thaliana* from undergoing programmed cell death. Preliminary evidence to its biological role comes from its high sequence similarity to *Dad1* from both vertebrates and invertebrates. My main objective is to provide additional support to *At-Dad1*'s cell death protection functions by identifying *At-Dad1* mutants from T-DNA mutagenized *Arabidopsis* lines. A loss of cell death protection function in these mutants would provide solid evidence to its biological role.

The PCR-based screening technique was modified and optimized from the technique used to isolated an actin2 mutant present in 12,000 lines containing the T-DNA mutagen randomly inserted throughout the *Arabidopsis thaliana* genome. Our positive results in amplifying the known actin2 mutant showed that our modified screening technique is effective in amplifying *Arabidopsis thaliana* insertional mutants present in these lines. The same lines used in the actin-2 mutant screen were used in the initial screen to identify superpools that might have an insertional mutant in the *At-Dad1* gene. For the screen, we used a combination of a *At-Dad1* gene specific primer with a T-DNA specific primer. A positive amplification of a fragment nearly the size of 2.0 Kb, confirmed by Southern analysis, indicates the presence of the T-DNA element inserted in or near the vicinity of the *At-Dad1* gene in superpool CD6-1. Future research will involve the identification of the mutant in the CD6-1's specific pools of 100 (CD6-11 to -30) and eventually in the individual mutant line itself. Moreover, we have developed conditions to screen for more *At-dad1* mutants from an additional 100,000 lines using the Expand Long<sup>TM</sup> Taq and the screening process of these lines are underway. These putative mutants will be grown, and their F2 generations will be genotyped and their phenotype will be characterized.

## **Platelet-Stat<sup>TM</sup> Distinguishes Drugs That Affect Platelets: Use of a Statistical Construct.**

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### **Oral Presentation**

Platelet-Stat<sup>TM</sup> measures platelet plug formation. Drugs have an effect on platelet function. Therefore, in a "healthy population" we wanted to determine what drugs affect the test. 470 blood donors were tested and given a questionnaire to obtain a medication history. The test was prolonged in persons taking non-steroidal antiinflammatory drugs (NSAIDs) and prescription drugs. As a result of the positive skewed distributions, two different types of statistical analyses were used to quantitatively assess the effects of these outlying values relative to changes in Platelet-Stat<sup>TM</sup> time as a function of drug consumption. The two foci became 1) shifts in the proportion (and percent chance) of individuals being affected with prolonged Platelet-Stat<sup>TM</sup> times and 2) with these outliers removed, would the same shifts in average Platelet-Stat<sup>TM</sup> time still be present? To this end a proportional analysis was performed using a cut score and ANOVA's were run with outlying values removed from the data set. The proportional analysis was performed to statistically describe the differences among groups. The drug free group yielded a risk of prolonged Platelet-Stat<sup>TM</sup> time of 0.47% which served as referent. Risk is expressed relative to the base rate of 0.47%. For example, persons taking NSAID drugs are 20 times more likely to have a prolonged Platelet-Stat<sup>TM</sup> time. Next the ANOVA was run again with the outliers removed from each distribution; outliers were those values greater than a raw score of 90 or a z-score of 4. Under this condition medications failed to significantly effect average Platelet-Stat<sup>TM</sup> time. This result indicates that the treatment effect is not one that globally affects every member of the sample fairly evenly in the tradition of classical test theory where  $X_{\text{NEW}} = X_{\text{OLD}} + \text{Constant}$ . Rather, there are likely just a few individuals who are affected in an extreme way by the drugs. Therefore, when natural and sometimes erratic self-dosing of NSAIDs is present without the supervision of medical professionals, standard parametric tests such as the t-test and Analysis of Variance are not the best choice in evaluating the effects of drugs on Platelet-Stat time.





