The 7th Annual
James F. Jakobsen Graduate Forum

Presented by the Graduate Student Senate

The Graduate Student Forum was named for Dean Jakobsen in 2001 in honor of his long-standing commitment to graduate student education and his work with the Graduate Student Senate. He served as the liaison to GSS for many years, attending our meetings assiduously. His advice and support have helped make our organization what it is today. In 1998, Dean Jakobsen retired as Associate Dean of the Graduate College after 30 years of service. He began his work at the University of Iowa in the Math Department after earning his Ph.D. from the University of Missouri that same year. After serving as the chair of his department, he began his career in the Graduate College in 1968. Dean Jakobsen has worked on numerous projects that have directly benefited graduate students during his tenure at Iowa. He helped establish the D.C. Spriestersbach Distinguished Dissertation Prize, the T. Anne Cleary Fellowships, the Graduate Opportunity Fellowships, and the Seashore/Ballard Dissertation Fellowship. In addition to his substantial work with minority students, he helped design the ad hoc interdisciplinary Ph.D. program. Most importantly, Dean Jakobsen is well-known for his humility, personal attention to students, and commitment to excellence. We hope that the Forum continues to live up to his outstanding reputation.

2005 Jakobsen Forum Committee

Margaret Burchianti	Forum Co-Chair
Sunday Goshit	Forum Co-Chair
James Krueger	Forum Co-Chair
Maria Martin	Fine and Performing Arts Division Head
Jessica Horst	Humanities Division Head
Karleen Jones	Social Sciences & Education Division Head
Aruni S. Arachchige Don	Biological and Life Sciences Division Head
Sarah Vigmostad	Mathematical and Physical Sciences and Engineering Division Head
David Taylor	GSS President
Kelly Andringa	Past Forum Chair
Darren Hoffmann	Publicity
J. Caldwell	Webmaster

Schedule of Events

Friday, April 29, 2005

7:00 pm River Room, IMU

6:30 pm Reception

7:00 pm Opening Remarks

Dean John Keller, Dean of the Graduate College

7:20 pm Selected Fine and Performing Arts Presentations

Moonface and Charlie
Angela Balcita (English – Nonfiction Writing)

Symphony in A Major
J.M. Schlitz (Chinese Linguistics)

Smoke and Mirrors: Constructed Realities
Neva Sills (Art and Art History)

Red Tornado Ice Cream
Paula Brandel (Art and Art History)

Surmountable
Allison Heady (Center for the Book)

Spam Letter+Google Image Search=Video Entertainment
Andre Silva (Cinema and Comparative Literature)

You Can Have This
Lee Emma Running (Sculpture School of Art and Art History)

Saturday, April 30 2005

8:15 am-5:30 pm, Blank Honors Center

8:15-9:00 am **Registration**
Blank Honors Center Lobby

9:00-10:30 am **Student Presentations Session I**
Rooms 114, 134, 140, 234 and 240

10:30-12:00 pm **Student Presentations Session II**
Rooms 114, 134, 140, 234 and 240

10:30-12:00 pm **Poster Session I**
Blank Honors Center Lobby

12:00-1:00 pm **Professional Development Panel**
"Balancing Family and Work"
Room 114

Lee Anna Clark, Associate Provost, Psychology
Sonia Hidalgo Nunez, Graduate Student, Spanish and Portuguese
Katina Lillios, Associate Professor, Anthropology
Rachel Williams, Assistant Professor, Art Education
Catherine Woodman, Associate Professor, Psychiatry

1:00-2:30 pm **Student Presentations Session III**
Rooms 114, 134, 140, 234 and 240

1:00-2:30 pm **Poster Session II**
Blank Honors Center Lobby

2:30-4:00 pm **Student Presentations Session IV**
Rooms 114, 134, 140, 234 and 240

4:00-5:30 pm **Closing Ceremony**
Blank Honors Center Lobby

D.C. Spriestersbach Distinguished Dissertation Award Honorees

Hind A. Al Abedleh, Ph.D.,
Postdoctoral Fellow, Chemistry, Northwestern University
C. Wesley Younts, Ph.D.,
Assistant Professor, Sociology, University of Connecticut

Jakobsen Forum Award Winners Announced

Session Schedules by Division

Humanities

9:00-10:30 am Session I – Humanities 1: From Pictures to Words (Room 114)

Presenters:

Elizabeth Sutton, *Art History*

"Naer het Leven" and the Emergence of Science: The Prints of Jan Huygen van Linschoten's *Itenerario* and Vesalius' *De Humani Corporis Fabrica*

Jeffrey Charis-Carlson, *English*

The Washington Novel and the Other Washington in the 1920s

Gregg Narber, *History*

Collaboration Undone: Walker Evan's Photos for "Let Us Now Praise Famous Men"

Richard Landon, *American Studies*

Sport Fiction and the Untellable

9:00-10:30 am Session I – Humanities 2: Language in Context I (Room 134)

Presenters:

Samuel McCormick, *Communication Studies*

Earning One's Inheritance: Rhetorical Criticism, Everyday Talk, and the Analysis of Public Discourse

Elaine Shenk, *Spanish and Portuguese*

West Liberty, Iowa: accommodation and resistance in a language contact community

10:30-12:00 pm Session II – Humanities 3: On Music and Art (Room 114)

Presenters:

Rachel West, *Musicology*

In the Beginning: *Le création du monde* and Cultural Representation and Some Elements of Symbolism Within

Dennis Breier, *Music*

A Picture of Weakness: Franz Schubert's Reception in the Late Nineteenth and Early Twentieth Centuries

Francesco Dalla Vecchia, *Music*

L'usage raisonnable des invraisemblances: Looking for surrealism in Poulenc's *Les Mamelles de Tiresi*

Brian Hallstoos, *American Studies*

The Drama in Leaving Church

10:30-12:00 pm Session II – Humanities 4: Questions to Ask the Philosophers (Room 134)

Presenters:

Peter LeGrant, *Philosophy*

A Defense of Spinoza's Account of Error Against Bennett's Criticisms

Anthony Bryson, *Philosophy*

An Appeal to Epistemologists

David Taylor, *Philosophy*

Rediscovering the C-Series: McTaggart's Lost Insight

George Wrisley, *Philosophy*

The Viability of Kuhn's Later Notion of Local Incommensurability

1:00-2:30 pm Session III – Humanities 5: Language in Context II – (Room 240)

Presenters:

Lisa Dewaard Dykstra, *Second Language Acquisition*

On Pragmatic Perception: Do American Learners of Russian Perceive the Sociocultural Information Inherent in Address Terms?

Maria Fruit, *Linguistics*

L2 Acquisition of Topicalized Subjects in European Portuguese

Nicolas Lucero, *Spanish and Portuguese*

Outsideness Revisited: Juan Jose Saer Reads William Faulkner

1:00-2:30 pm Session III – Humanities 6: Relationships with Women & Children Through the Ages (Room 114)

Presenters:

Jordan Copeland, *Religious Studies*

A Stalled Ascent up Love's Heavenly Ladder: An Examination of Alcibiades' Speech in Plato's *Symposium*

Megan Threlkeld, *History*

Imperialism and the "Non-Political Sex:" Suffragist Responses to the War of 1898

Meghan Warner, *History*

Anti-Rationalism and the Lunatic Prophets in 1960's America

Doyle Buhler, *Art History*

Education with a Switch: Francis William Edmonds' "The New Scholar" and Corporal Punishment in 1840s America

1:00-2:30 pm Session III – Humanities 7: Religion in the Modern World (Room 134)

Presenters:

Steven Fink, *Religious Studies*

Maimonides on Moral Perfections and Loving God

Daniel Boscaljon, *Religious Studies*
Faith and Interpretation
Mervat Youssef, *Journalism and Mass Communication*
An Orient Defying Borders: Constructing the Muslim Image in Europe on National Public Radio
Brett Gaul, *Philosophy*
Is the Problem of Evil a Problem for Descartes?

2:30-4:00 Session IV – Humanities 8: New Issues in Cinema (Room 114)
Presenters:
Jennifer Proctor, *Cinema and Comparative Literature*
Consuming the Body of Christ: Marketing, Ritual and Spectatorship in Mel Gibson's *The Passion of the Christ*
Claudia Pummer w/ Jennifer Fleeger, *Cinema and Comparative Literature*
(Score) Bellouresque
Jesse Schlotterbeck, *Cinema and Comparative Literature*
9/11 and Documentary Filmmaking

2:30-4:00 Session IV – Humanities 9: The Modern World: 20th and 21st Century Issues (Room 134)
Presenters:
Amy Spellacy, *English*
¿Qué Hay, Amigo?: Coca-Cola and Images of U.S. Imperialism during the 1940s
Kristine Newhall, *Women's Studies*
Is this Working Out?: The Gendered Nature of Fitness Centers
Sarah Ono, *Anthropology*
Cell Phones, Walkie Talkies, and Nextels: Tools Required When the Field is Multi-Sited and the Community is Mobile
Gunnar Benediktsson, *English*
Working Stiffs: Superman, Masculine Power and the Ordinary American

Social Sciences and Education

9:00-10:30 Session I – Social Sciences 1: Politics and Economy Around the Globe (Room 140)
Presenters:
Todd Walker, *Economics*
Price Revelation and Forecasting the Forecasts of Others
Stephen Nemeth, *Political Science*
International Crises and Domestic Interest Group Activity

Holly Hansen, *Political Science*
Institutions or Identity: Ethnic Party Success in Eastern Europe
Clayton Thyne, *Political Science*
Good Neighbors, Bad Neighbors, and Domestic Disputes: The Effect of Interstate Relations on Civil War, 1948-1992

10:30-12:00 pm Session II – Social Sciences 2: Interpersonal and Learning Dynamics (Room 140)

Presenters:
Robin Barry, *Psychology*
Non-Hostile Withdrawal during Marital Conflict in Newlywed Marriage
John Chambers, *Psychology*
Misperceptions in Intergroup Conflict: Disagreeing About What We Disagree About
Brandon Abbs, *Psychology*
Is Overt Repetition Critical to Word Learning?
Patricia Wade, *Educational Psychology*
The Relationship between Sexual Orientation and Performance on a Mental Rotation Task

10:30-12:00 pm Poster Session I – (Lobby)

Presenters:
(1) Caglar Akcay, *Psychology*
Sequential Modulations of Simon Effect: Feature Integration or Conflict Adaptation?
(3) Tom Gilsenan, *Social Work*
Partners in Peacemaking: Albert Einstein and Jane Addams
(5) Lin Gu, *Asian Languages and Literature*
Investigating Learner-Generated Language-Related Episodes During Collaborative Pair Work
(7) John Humrichouse, *Psychology*
Self-Other Ratings, Trait Visibility, and Acquaintanceship: A Longitudinal Study of Newlywed Couples

1:00-2:30 Session III – Social Sciences 3: Sciences of Information (Room 140)

Presenters:
Arul Mishra, *Marketing*
The Subversive Heart in the Human Mind: The Meddling-in of Affect in Information Integration
Dan Caprar, *Management and Organizations*
Why People Believe (or Don't Believe) Our Research: The Role of Self Affirmation Processes

Alan Aldrich, *Library and Information Science*
Taking the Walk: An Analysis of State Library Mission Statements
Himanshu Mishra, *Marketing*
How Come Good Things Always Happen to Bad People: Likelihood Assessments in Social Domains

1:00-2:30 Poster Session II – (Lobby)
Presenters:
(2) Robert Latzman, *Psychology*
Electrodermal Responding to Aversive Nonreward in Children
(4) Ashleigh Richard, *Psychology*
Correspondence of Transsaccadic Memory
(6) Lia Schultz, *Educational Policy and Leadership Studies*
Heir to an American Education: An Intergenerational Framework for Investigating Education in the United States
(8) Joshua Weller, *Psychology*
A Decision Neuroscience Study of the Role of Emotion Under Varying Levels of Risk and Ambiguity

2:30-4:00 Session IV – Social Sciences 4: Education in History and Culture (Room 140)
Presenters:
Ryan Wells, *Education*
Education and Democratization after the Cold War
Hyun-Ju Kim, *Foreign Language and ESL Education*
Rating Variability in Assessment Process
Valerie Nyberg, *Curriculum and Instruction*
Melting Pot Meets Tossed Salad: A Historical Examination of Culturally Relevant Pedagogy

Biological and Life Sciences

9:00-10:30 Session I – Biological and Life Sciences 1: Diverse Approaches in Developing Medicine (Room 240)
Presenters:
Dwight Ferguson, *Epidemiology*
Sex Hormones and the Estrogenic Effects of Organochlorines and Polychlorinated biphenyls
Hua Ou, *Speech Pathology and Audiology*
The Effect of Low Frequency Car Noise on Hearing Aid Output

Yifei Liu, *Clinical and Administrative Pharmacy*
Drug Information Seeking Intention and Behavior after Exposure to Direct-to-Consumer Advertisement (DTCA) of Prescription Drugs
Andrea Frank, *Psychology*
The Necessity for Identity in Training Symmetry to Pigeons

10:30-12:00 pm Session II – Biological and Life Sciences 2: Nucleic Acid Biology and Metabolism (Room 240)

Presenters:
Banoo Malik, *Biological Sciences*
Phylogenomic Analyses Reveal an Early Origin of Meiosis in Protists
Paulina Mena, *Biological Sciences*
Effects of Chromosomal Rearrangements on Patterns of Sequence Variation in *Drosophila americana*
Wei Li, *Genetics*
AP-2 Transcription Factors Function at Multiple Steps of Zebrafish Neural Crest
Siu Wah Wong-Deyrup, *Chemistry*
Creating an Artificial Enzyme: Activity of a Novel Dimeric Metalloprotein Towards DNA

10:30-12:00 pm Poster Session I – (Lobby)

Presenters:
(9) Laura Acion, *Biostatistics*
Anhedonia in Multidrug-Resistant Tuberculosis HIV-negative Patients
(11) Tami Argo, *Clinical and Administrative Pharmacy/Epidemiology*
Infection Risk Among Patients Receiving Long-Term Clozapine Treatment
(13) Hind Baydoun, *Epidemiology*
Role of Human Leukocyte Antigen Sharing in Recurrent Spontaneous Abortions
(15) J. Caldwell, *Biological Sciences*
Characterization of Chordotonal Dysfunction in *Drosophila melanogaster*
(17) Sumaya Hamadmad, *Pharmacology*
Erythropoietin Signal Transduction Requires Protein Geranylgeranylation
(19) Ben Hippen, *Dermatology*
Precursors of the Lipid Water Barrier of Skin Progress through Distinct Cellular Compartments during Keratinocyte Differentiation
(21) Michael Hitchler, Free *Radical and Radiation Biology*
Expression of Manganese Superoxide Dismutase in Breast Epithelial Cells
(23) Katerina Kulhankova, *Occupational and Environmental Health*
Role of Complex Environmental Exposures in Etiology of Allergic Airway Disease

1:00-2:30 pm Poster Session II – (Lobby)

Presenters:

(10) Wuan-Jin Leu, *Clinical and Hospital Pharmacy*
Evaluation of Cumulative Antimicrobial Susceptibility Data and Resistance Rates in US Hospitals

(12) Gumei Liu, *Neuroscience*
Adeno-Associated Virus Type 4 (AAV4) Mediates Functional Correlation of CNS Disorder in a Murine Lysosomal Storage Disease Model

(14) Ethan Mohns, *Psychology*
The Ventrolateral Preoptic Area and Basal Forebrain Play Opposing Roles in the Descending Modulation of Sleep-Wake Cyclicity in Infant Rats

(16) Kirill Nourski, *Neuroscience*
Simultaneous and Post-Stimulatory Effects of Acoustic Nouse on the Auditory Nerve Electrically-Evoked Compound Action Potential

(18) Jana Peterson, *Community and Behavioral Health*
Differential Effects of Active Living on Quality of Life at Various Levels of Income

(20) Lei Yu, *Free Radical and Radiation Biology*
Application of Quantitative RT-PCR to Promoter Activity Reporter Assay

(22) Yongming Zhao, *Clinical and Administrative Pharmacy*
Factors Influencing Pre-ESRD Anemia Treatment with Erythropoietin in Elderly Hemodialysis Patients

2:30-4:00 pm Session IV – Biological and Life Sciences 3: Molecular Biology in Cell-based and Unicellular Systems (Room 240)

Presenters:

GunHee Kim, *Pharmacology*
Effects of Diminished Lipoprotein Availability on Protein Prenylation in Intact Cells

Sandhya Shankarnarayan, *Biological Sciences*
Perturbations of the Cell Wall of the Baker's Yeast *Saccharomyces cerevisiae* Leads to the Activation of the SLN1-SKN7 Signal Transduction Pathway

Tomaz Koprivnjak, Microbiology
Cation Induced Transcriptional Regulation of the dlt Operon of *Staphylococcus aureus*

Mathematical and Physical Sciences and Engineering

9:00-10:30 am Session I – Mathematical/Physical Sciences and Engineering 1: (Room 234)

Presenters:

Yongli Zhao, *Mechanical Engineering*
Dynamics of Driven Liquid Films on Heterogeneous Surfaces

Jessica Woodworth, *Biomedical Engineering*
Impact of Restricted PIP Joints on MCP Joint Motion in the Human Hand

Tony Sokolov, *Chemistry*
Infinite 1-D Supramolecular Ladder-like Architectures via Co-Crystals

Ioulia Skvortsova, *Chemistry*
Tissue Autofluorescence Spectra Simulation for the Purpose of Cancer Diagnosis

10:30-12:00 pm Session II – Mathematical/Physical Sciences and Engineering 2: (Room 234)

Presenters:

Xingdong Zhang, *Geography*
Using a Genetic Algorithm to Generate Alternatives for Multiobjective Corridor Location Problems

Mark Olszewski, *Biomedical Engineering*
Quantitative Analysis of Coronary Multidetector Computed Tomography (MDCT) Images: Inter-Expert Variability and the Design of an Automated System

Luke Haverhals, *Chemistry*
Simultaneous Detection of Ethanol and Smoking By-Products with Fuel Cell Based Sensors

Tamara Hamilton, *Chemistry*
A Ligand Constructed in the Solid State Gives Rise to Metal-Organic Polygons and Polyhedra

10:30-12:00 pm Poster Session I – (Lobby)

Presenters:

(25) Alina Bejan, *Computer Science*
Adaptive, Self-Optimizing DHTs

(27) Hyunggun Kim, *Biomedical Engineering*
Dynamic Element Analysis of Bioprosthetic Heart Valves Using an Experimentally Derived Nonlinear Material Model during the Opening Phase of Cardiac Cycle

(29) Ahmed Lachhab, *Civil and Environmental Engineering*
Measurement of Velocity and Dispersion of Conservative Tracer in a Porous Media by Means of Three-Dimensional Particle Tracking Velocimetry

1:00-2:30 pm Session III – Mathematical/Physical Sciences and Engineering 3: (Room 234)

Presenters:

Ye Xu, *Computer Science*

Computer-aided Diagnosis of Emphysema on MDCT Images Using Volumetric Features

Tomislav Friscic, *Chemistry*

Construction of Molecules Using Linear Templates in Crystals

Matthew McCullough, *Biomedical Engineering*

The Characterization of Current Wrist Prosthetic Devices Using Finite Element Analysis

Daniel Snyder, *Geoscience*

Three Hundred Thirty Million Years BC (Before Corn): Iowa and the Conquest of the Land

1:00-2:30 pm Poster Session II – (Lobby)

Presenters:

(24) Helen Schroeder, *Mathematics*

(K)not Mathematics: Colored Chalk and Some Rope

(26) Alessio Signorini, *Computer Science*

The Indexable Web is 11.5 Billion Pages

(28) Gabriele Villarini, *Civil and Environmental Engineering*

Effects of Observational Uncertainties on the Estimated Multifractal Properties in Radar Rainfall Fields

2:30-4:00 pm Session IV – Mathematical/Physical Sciences and Engineering 4: (Room 234)

Presenters:

S. Brookhart Shields, *Chemistry*

De novo Design of Metallopeptides: Investigation of the Prion Protein Octarepeat Copper-Binding Motif

Seng Keat Ooi, *Civil and Environmental Engineering*

2-D Large Eddy Simulation of Lock-Exchange Gravity Current Flows

Yi-Ching Lee, *Mechanical and Industrial Engineering*

Change Detections Performance under Divided Attention with Dynamic Driving Scenarios

2005 James F. Jakobsen Forum Abstracts and Artists' Statements—

Listed by Division

Fine and Performing Arts

Angela Balcita *(English – Nonfiction Writing)* ***Moonface and Charlie***

◊ In **Moonface and Charlie**, we meet a narrator who is dealing with a kidney disease that takes over her life, as well as dictate her emotions and her mental and physical strength. She receives life-saving transplants from her brother and her boyfriend that make her feel forever dependent on others. To counteract these feelings of helplessness and dependence, she uses comedic performance and story-telling to make her feel like she has control over her situation. But she learns that while making tragedy into comedy not only give her a sense of control of her life, it also prevents her from confronting reality. How do we tell the stories of our lives? How do we use story-telling and performance to hide our real emotions? How do these acts also reveal our true selves? How do the stories of our experiences define us and ultimately change the experience itself?

Paula Brandel *(Art & Art History)* ***Red Tornado Ice Cream***

◊ Current studio work is concerned with movement of paint in its many different forms, where for the most part, paint acting as paint does is vital. I am interested in creating ethereal, atmospheric fields with a thicker amorphous form inserted either into the image or on the picture plane. These amorphous forms consist of paint that is poured, pooled, dripped, and dropped whereas the ethereal paint is created by using delicate washes. Interest lies in movement of paint. The paint moves in different ways in the painting. The movement of paint creates the space in the painting as well as creating the amorphous figure. The forms recede and advance in perspective space, however shallow or deep that space may be. Forms can appear to slide, jump, twist, pull, polka, push, swarm, compress within the painting.

Allison Heady *(Center for the Book)* ***Surmountable***

◊ Visual art display, 54"x54"

Lee Emma Running *(Sculpture School of Art and Art History)* ***You Can Have This***

◊ In my installations I am proposing that botanical patterns traditionally found in wallpaper and upholstery fabrics could be the flora of an interior world. I m setting the pattern free from the structures of traditional repetition and allowing it to become a tool for defining alternate realities. "You Can Have This" uses pattern as a mnemonic trigger. I am printing the same pattern on the walls of the gallery and on an edition of folded books that the viewer can remove from the wall and take home. The hope is that the books that are taken away are incorporated into the lives of my viewers. Once this

happens I have asked that the viewer send me an image of the book in its new environment. Much like a fabric swatch, I am interested in the book in the home triggering the experience of the installation in the mind of the viewer.

J.M. Schlitz *(Chinese Linguistics)* ***Symphony in A Major***

◊ It has become convention for "modern classical" composers to break with all structures of the past and build entirely new structures, often understood only by music theorists and other composers. But in always seeking to break new boundaries, what have we lost? I am not a composer, and there is nothing shocking, avant-garde, or unconventional about this symphony. Nothing, that is, except that it was not composed by a composer, and that it breaks the convention of being unconventional. It is scored for electronically-simulated symphony orchestra - though this difference is barely noticeable - and my only frame of reference was a lifelong familiarity with traditional pre-20th century structures. Yet the end result astounded me. It seems sometimes we do not compose out of conscious choice, but simply because we must; and that we are, after all, people of our own age.

Neva Sills *(Art and Art History)* ***Smoke and Mirrors: Constructed Realities***

◊ The studio-era musical asked the viewer to suspend disbelief as actors broke into song on a thinly veiled sound stage. I mimic this subtle self-reference in my painting—that it is a constructed space—in order to understand fantasy of place and the subsequent creation of suspect experience. I am working to find how fabricated realities—landscape, memory, and identity—may be deconstructed through color and form.

Andre Silva *(Cinema and Comparative Literature)* ***Spam Letter + Google Image Search = Video Entertainment***

◊ Each word of a spam letter is matched with one of countless available online images that have been linked, in some way, to that word. The spam letter is further brought to virtual life though an online text-to-voice program.

Humanities

Gunnar Benediktsson *(English)* ***Working Stiffs: Superman, Masculine Power and the Ordinary American***

◊ It is tempting to see Superman's defense of ordinary working Americans as a coherent progressivism that extends from the New Deal to the New Left. At best, however,

Superman s defense of the urban poor enacts competing readings: a statist universalism and a working-class entitlement dependent on individual charity. The stage is thus set for a dialectic between two seemingly very different Supermen: a collectivist hero in the waning years of the New Deal, and a benevolent potentiary who oversees the gradual erosion of the American welfare state, embodying a reactionary populism that would come to signify the essence of what Walter Lippmann famously dubbed the American Century. What is revealed by this conflict is not simply a transition from collectivism to reactionary populism. Rather, it shows the consistent relation of Superman comics to a set of normative rhetorics which simultaneously advocate and question the programmatic goals of middle-class American consumers.

Daniel Boscaljon *(Religious Studies)* ***Faith and Interpretation***

◊ Albert Schweitzer believed: There is room for an attempt to bring order into the chaos of the Lives of Jesus. I attempt to contribute toward that goal utilizing structuralist and post-structuralist methods of reading and literary theories. I argue that the matrix of the Gospels is the question of the identity of Jesus the answers to his question 'Who do you say that I am?' The surface meanings are identities given by the gospels (via the parables and I am statements): the significance rests in the impact of Jesus asking the question. That very question is what invites interpretation as a projection of meaning while simultaneously neutralizing the possibility of a hierarchy of meanings. The theoretical foundation for this argument is provided by Barthes reading of Sarrasine. I conclude by exploring the ramifications of both the action of interpreting Jesus and the notion that Jesus would invite such interpretation.

Dennis Breier *(Music)* ***A Picture of Weakness: Franz Schubert's Reception in the Late Nineteenth and Early Twentieth Centuries***

◊ Franz Schubert is considered today as a man who masterfully composed in a wide range of musical genres, bridged the gap between the classical and romantic, and has rightfully earned his place amongst the great composers. However, Schubert's reception in the late nineteenth and early twentieth centuries paint a picture of a weak and effeminate man, who had little talent for composing anything but art song, then considered the simplest of musical genres. The reasons for Schubert's inadequate reception during this period are both the changing views of what was considered the ideal man in England and the Americas, as well as Schubert s constant comparison to Beethoven, who was considered one of the greatest composers of the day. The overall goal of this paper is to show how Schubert's music, personality and physical appearance placed him outside the realm of the ideal Victorian man, and how his genius was lost to his perceived societal awkwardness and composition inability.

Anthony Bryson *(Philosophy)* ***An Appeal to Epistemologists***

◊ When externalist theories of justification and knowledge appeared, internalists could not help but wonder whether externalists were addressing traditional epistemological topics.

Although initially there seemed to be a consensus concerning particular cases of justified belief and knowledge, the externalist theories offered as an explanation of those cases seemed to miss the point of epistemological inquiry altogether. As a result, the epistemological debate has arrived at a standstill. In this paper, I argue that the cause of the present stalemate is the result of a commitment to conceptual analysis and a belief in shared epistemic concepts. Given the presence of conceptual diversity, I suggest that the epistemologist abandon conceptual analysis for conceptual criticism. Furthermore, I present a new characterization of the interanlist/externalist controversy that reveals the underlying motivations of the two views. In light of this new characterization and the shift to conceptual criticism, there emerge cogent reasons for accepting internalism.

David Buhler *(Art & Art History)* ***"Education with a Switch: Francis William Edmonds' _The New Scholar_ and Corporal Punishment in 1840s America"***

◊ Francis Edmonds' painting The New Scholar (1845) depicts a frightened child being led by a maternal figure into the hands of the schoolmaster, who, while calmly welcoming the child with a sweet expression and loving hand, hides a switch behind his leg. This paper looks at the painting as representative of childhood educational reforms occurring in the 1840s, particularly those regarding corporal punishment. In addition, the image is discussed stylistically and contextually as an emblem of American society at the time.

Jeffrey Charis-Carlson *(English)* ***The Washington Novel and Other Washington in the 1920s***

◊ In the decades since Allen Drury's Pulitzer-prize-winning fictionalization of the U.S. Senate, "Advise and Consent" (1959), the "Washington Novel" has evolved into a loosely defined literary genre that conjoins behind-the-scene exposé, worst-case political thrillers, White House murder mysteries, and various forms of comic satire. Despite the ubiquity of these novels in airport bookracks, many Washingtonian writers – especially native African American novelists – declare their experience of "Washington" to be underrepresented on the national literary landscape. In contrast to the mainstream novelists who invoke the city primarily for its political or populist symbolism, these writers begin to develop a counternarrative – what I am calling the Other Washington Novel – that explores the dissonance created by having under-represented Other Washingtons directly abut the architectural embodiments of U.S. democracy. This paper will read Edward Christopher Williams' serial novel of African American Washington in the 1920s – "The Letters of Davy Carr", recently published in book form as "When Washington Was in Vogue" (2004) – as an early and forgotten example of this counternarrative tradition. The Other Washington that Williams depicts is, in fact, doubly othered. It is placed in contrast to how the city's white monumental-core as depicted in such 1920s novels as Harvey Ferguson's "Capital Hill" (1923). But it also serves as the bourgeois bête noire to the raucous literary scene depicted in the Harlem-identified novels of the broader Negro Renaissance. As a result, Williams' grand accomplishment is to triangulate successfully the conceptual and geographic distance between his Washington, the "national capital," and the "Black Capital of the World."

Rebecca Church *(History)* ***Agnes de Barbezieux, Humble Abbess or Lord of Saintes***

◊ The 12th century in Europe has often been described as a time of dwindling opportunities for women, as patrimonial estates were consolidated and marriage options were consequently limited. Paradoxically, the Church, via the institution of abbeys, provided a place for women to exert extensive control over people and property, with little direct oversight by men. The example of Agnes de Barbezieux, while perhaps not typical, shows how a woman of substantial means, using similar skills and strategies as employed by her secular counterparts, might control and expand a large, landed estate on behalf of an Abbey, one, in fact, founded by her grandmother. The example of Agnes, as revealed by the monastic cartulary she constructed, gives a glimpse into an opportunity, often overlooked by historians, for women to exert authority in the fluctuating political climate of the 12th century.

Jordan Copeland *(Religious Studies)* ***A Stalled Ascent up Love's Heavenly Ladder: An Examination of Alcibiades' Speech in Plato's Symposium***

◊ An initial reading of Plato's Symposium reveals a straightforward exploration of the nature and meaning of love. However, subsequent analysis indicates that questions about love cannot be disconnected from deeper questions regarding the constitution of a good human life. Thus, in the dialogue, each eloquent encomium points beyond itself to a deeper furtive eulogy of what the orator takes to be the good life. This paper will argue that Alcibiades' speech surpasses the earlier egregiously errant speeches and offers a pedagogical case in point, concretization of Diotima's message. However, further analysis of the encomium will reveal that the example is not entirely positive; Alcibiades is offered up by Plato as an example of one who has not concluded the ascent up Love's heavenly ladder and is, therefore, destined to err in the overall direction and ordering of his life.

Francesco Dalla Vecchia *(Music)* ***L'usage raisonnable des invraisemblances Looking for surrealism in Poulenc's Les Mamelles de Tirési***

◊ "I am a feminist!-she states-and I don't accept men's authority!" Thérèse is fed up with her work as wife and housekeeper: she cannot stand her stupid husband anymore. She just wonna do what men do. Her dreams eventually become true. Suddenly her breasts fly away like two colorful balloons; at once, beard and mustaches cover her face and... here she is: a man! Impossible, absurd events, like this famous opening scene, make Guillaume Apollinaire's play surreal, and it is generally assumed that Francis Poulenc's operatic setting is, as consequence, a surrealistic opera. In order to understand Poulenc's attitude toward surrealism I compared the opera with Apollinaire's poetry and Magritte's paintings. Moreover I isolated the surrealistic essence of the original plot and checked its transformation in the opera.

Lisa DeWaard Dykstra *(Second Language Acquisition)* ***On Pragmatic Perception: Do American Learners of Russian Perceive the Sociocultural Information Inherent in Address Terms?***

◊ For a native English speaker, learning a language which has more than one way of expressing the idea 'you' presents a special challenge. Americans who have studied Spanish or French will remember learning about the use of 'Usted' in Spanish or 'vous' in French when addressing people they do not know well or who are of higher status, and 'tú' or 'tu' when talking to friends and family. Russian also has this distinction. The use of the informal address pronoun 'ty' and the formal address pronoun 'Vy' is one way in which Russian creates distinctions in relationships. This study examines the ability of American learners of Russian to perceive the social weight of these terms. Errors in the selection of address term can lead to breakdowns in communication, which can lead to a breakdown in relationship. These types of errors are more serious than misunderstandings caused by a grammar slip.

Kate Elliott-Roberts *(Art History)* ***Robert Walter Weir's The Landing of Hendrick Hudson and Jacksonian America***

◊ American painter and art educator, Robert Walter Weir depicted the landing of seventeenth century explorer Henry Hudson twice in the 1830s. Certainly, the subject held local interest for the painter, as he was head of art instruction at West Point Academy, situated on the banks of the Hudson River, discovered by and named for the English explorer. But, because of his military connection, the paintings by Weir also suggest the profound political dimension of many of these mid-nineteenth-century images of exploration and first contacts between whites and native populations. When viewed in the context of American military policy of the 1830s, Weir's imagery and his rather ambiguous representation of Native Americans suggests the larger issue of the implications of Jacksonian politics of the 1830s, specifically military dealings with Native tribes after the 1832 Indian Removal Policy.

Steven Fink *(Religious Studies)* ***Maimonides on Moral Perfections and Loving God***

◊ In reading the final chapter of the Guide for the Perplexed, one might initially assume that the medieval Jewish philosopher and theologian Moses Maimonides upholds contemplation as the ultimate human ideal. Maimonides declares intellectual perfection, or the knowledge of God, to be the "true perfection of man." Upon closer examination, however, it becomes clear that there is an active element linked to intellectual perfection or knowledge of God. This active element can be thought of as moral perfection, thereby highlighting an important dynamic in Maimonides' thought. For Maimonides one type of moral perfection can lead to intellectual perfection, which in turn results in a new type of moral perfection. This paper will investigate this new type of moral perfection, and the argument will be made that the additional element of love for God makes the new type of moral perfection the full development of the first type.

Maria Fruit *(Linguistics)* ***L2 Acquisition of Topicalized Subjects in European Portuguese***

◊ Current research in Second Language Acquisition (SLA) literature provides evidence that adults acquire language-particular features in their second language (L2) in the same way that children acquire native language (L1). Specifically, SLA research is devoted to establishing whether or not and to what extent L2 learners have access to Universal Grammar (UG), understood as the innate and unconscious linguistic system individuals access to acquire L1 features and properties that are not learned in the classroom or in natural environments. This study investigated L2 speakers' acquisition of subject-topic constructions in European Portuguese, constructions which are available in English but are governed by different conventions. Overall, this study examined the role of the L1 and of UG in the L2 learner's acquisition process. Results vary, but there is positive evidence from two experimental tasks that learners have transferred their L1 features and that they do have full access to UG options.

Brett Gaul *(Philosophy)* ***Is the Problem of Evil a Problem for Descartes?***

◊ In Descartes' Theodicy of Error, Michael Latzer argues that the Fourth Meditation has general significance for the project of theodicy and offers a solution to the problem of evil as complete, in its own succinct way, as Leibniz's is on a grander scale. I do not think that anyone has understood accurately the complex theodicy offered there, however. Commentators disagree about the argument(s) and have not carefully explained exactly what Descartes says that applies to the problem of evil. The purpose of my paper is three-fold. I (1) explain the theodicy that Descartes offers to explain philosophical error in the Fourth Meditation; (2) argue that although we are justified in understanding this theodicy as concerning the problem of evil, the advice Descartes offers for avoiding philosophical error does not apply to avoiding sin (an example of evil); and (3) argue that the theodicy actually may be no theodicy at all.

Brian Hallstoos *(American Studies)* ***The Drama in Leaving Church***

◊ This paper focuses on a passion play written in the 1920s by Willa Saunders Jones, an African American woman from Chicago's South Side. It traces the play s transition from a modest production in black Baptist churches to a major theatrical spectacle by the 1950s. The play primarily drew upon local, non-professional talent, but also featured such musical stars as Dinah Washington and Mahalia Jackson. At a time when Southern, working-class migrants flooded the city and stimulated the development of gospel music, Jones appealed to middle-class audiences by the type of music and language she included in the play. I argue that her Passion Play was successful, in part, because she consistently catered to the cultural expectations of a conservative and established church community, even when she introduced secular elements to attract large audiences.

Pankaj Jain *(Religious Studies)* ***Exploring India: From Alex To Bill***

◊ India and USA can be called two melting pots of human history. Both have much to learn from each other's history. Among ancient civilizations, India is distinctive for its antiquity and continuity. Apart from its own vitality, the continuity of Indian civilization is largely due to its ability to adapt to alien ideas, harmonize contradictions and mould new thought patterns. Her constant contacts with the outside world also gave India the opportunity to contribute to other civilizations. Whilst other ancient civilizations, e.g., Greek, Roman, Mesopotamia, have long ceased to exist, Indian civilization has continued to grow despite revolutionary changes. In this presentation, I will discuss some motivations for us to explore India as well as the motivations for early and medieval explorers to India, ranging from Alexander to Columbus to the recent resurgence of interest in India exemplified by Bill Gates and Bill Clinton. I raise the questions such as, how would our studying and exploring India improve the life of American society in the next generation? Is there a link between the two countries set poles apart geographically, culturally and otherwise?

Richard Landon *(American Studies)* ***Sport Fiction and the Untellable***

◊ Though it is a story about a player on a rejuvenated football program in West Texas, Don DeLillo's book, End Zone, is rarely described as being about football. The narrator seems less interested in the success of his team than he is with little obsessions scattered throughout the story: obsessions with language and routine, food and weight, nuclear warfare, and silence. Eluding any traditional sport narrative, the meaning or importance of sport is not easy to locate in the novel. My paper attempts to show that it is through DeLillo's attention to the structure of games played to kill dead time between practices, games played to simulate the escalation of nuclear war, and as DeLillo has suggested, the game of fiction itself that End Zone offers not just an explanation the meaning of sport, but also the role of sport fiction.

Peter LeGrant *(Philosophy)* ***A Defense of Spinoza's Account of Error Against Bennett's Criticisms***

◊ Spinoza claims that Descartes and Bacon failed to grasp the true cause of human epistemic error knowledge of which is of critical importance. It is my contention that, in order to properly understand Spinoza s metaphysics and epistemology, it is absolutely crucial to be clear as to what he considers imaginings to be. In the Ethics, Spinoza claims that imaginings are the sole cause of falsity in that they are incomplete mental items. It is the goal of this paper to properly explicate Spinoza's views on the metaphysical aspects of imaginings and defend them against two objections Jonathan Bennett raises in A Study of Spinoza's Ethics. Bennett claims that Spinoza wrongfully treats error as consisting in imagining's lack of knowledge; he thinks that Spinoza should claim that an imagining a sheer sensory state causes a belief-based error. If my account of Spinoza is correct, both objections fail.

Nicolas Lucero *(Spanish and Portuguese)* ***Outsideness Revisited: Juan Jose Saer reads William Faulkner***

◊ William Faulkner has had a major influence in Latin American Literature since the late fifties. In some of his narrations and critical essays, Argentine novelist Juan José Saer (1937) has suggested an insightful reading of Faulkner which overtly contests previous judgments which had focused on innovative techniques and tragic and epic elements in Faulkner. In my paper, I examine an explicit intertextual relation between Saer's Cicatrices [Scars, 1969] and Faulkner's Light in August (1932), which illuminates the concept of narrative form and the notion of character that Saer brightly reads in Faulkner and elaborates in his own narrative. Mikhail Bakhtin s concept of outsideness as the principle of aesthetic creation provides an excellent bearing to assess that endeavor.

Samuel McCormick *(Communication Studies)* ***Earning One's Inheritance: Rhetorical Criticism, Everyday Talk, and the Analysis of Public Discourse***

◊ This essay answers critical and theoretical calls for the study of ordinary political discourse by analyzing a piece of transcribed discourse in which Alvertis Simmons, a member of the Denver, Colorado African American community engages a panel of school board officials on the topic of racial stereotypes in an elementary school science experiment. Simmons's discourse can be shown to reorganize features of integrationist and nationalist ways of speaking, two dominant strands of mid- to late-20th century African American public address. Building a theory of oratorical influence out of these intertextual relationships, this essay concludes that the force of public discourse may reside less in a speaker's ability to persuade an audience than in an audience s willingness to recycle and revise figural aspects of a speaker s discourse in their everyday talk.

Gregg Narber *(History)* ***Collaboration Undone: Walker Evans' Photos for Let Us Now Praise Famous Men***

◊ Many historians regard Let Us Now Praise Famous Men as a collaboration unique to the 1930s and emblematic of the best in that era's documentary tradition. The book is, however, known mainly by a 1960 edition published when James Agee, author of the narrative, had died. Comparison with the little known 1941 edition demonstrates that, rather than a collaboration, Evans used the revised edition to significantly revise the photographic statement, producing an art book rather than a collaborative picture of tenant farmers' lives. If the 1941 edition is a unique collaboration; the 1960 revision is transformed into an art book and confounds the intention to jointly portray the lives of its subjects.

Kristine Newhall *(Women's Studies)* ***Is this Working Out?: The Gendered Nature of Fitness Centers***

◊ The spaces in which we exercise are important markers not only of our perceptions of fitness and health but also cultural attitudes on race, sex, and class. This paper attempts to move away from issues of how and why we exercise and the prominent cultural debates

over women and body image, areas that have been examined by cultural and feminist theorists and historians. These examinations, while helpful, they omit the extensive discourse on the role of our everyday spaces and our performance within them. An analysis of space illuminates some of the more subtle ways in which gender performance is controlled within a fixed space. I argue, in this paper, that despite the preponderance of women in the gym, these spaces remain masculine. Additionally I examine some of the consequences for women exercising in a space that often presents itself as neutral but remains gendered male.

Sarah Ono *(Anthropology)* ***Cell Phones, Walkie Talkies, and Nextels: Tools Required When the Field is Multi-Sited and the Community is Mobile***

◊ Emerging research reinforces the multitude of ways in which communities are being defined, the strategies in use to keep participants connected, and the continuing development of interdisciplinary projects. My participant-observation in the context of film festivals required that I embrace a multi-sited field, and an understanding of the different tools, and their multiple functions, needed to keep a mobile population connected. Film festivals are an example of a complex, contemporary community in which the interaction of participants in a particular site is transient and temporary, but the connections contribute to a long-lasting and far-reaching network. These networks transcend national borders, conceptual boundaries, and complicate the task of defining a field site. Connection is changing how we see anthropology, and how anthropology views its subjects. This paper assesses the multiple forms of communication required to stay connected in the context of an unconventional field site: film festivals.

Claudia Pummer w/Jennifer Fleeger (Score) *(Cinema and Comparative Literature)* ***bellouresque***

◊ Symbolic Blockage by French film theorist Raymond Bellour, who performs a close, literal analysis of the famous cornfield sequence in Hitchcock's North by Northwest. Bellour's work deals with the difficulty of translating cinema into written words. In order to get a hold of the unattainable text, Bellour illustrates his written words with tables, charts, and maps as well as 266 still-photographs depicting the beginning and ending of each shot in the sequence. Our project tries to retranslate Bellour's writings and graphs into an audio-visual text. The visual composition refers to the act of flipping through the book-pages, of deciphering and connecting words, images and drawings. The score is composed by reading his written text as a musical score, by treating Bellour's diagrams as notations. The frozen nature of Bellour's textual analysis is visually and aurally reanimated and retemporalized, providing yet another unattainable text .

Jennifer Proctor *(Cinema and Comparative Literature)* ***Consuming the Body of Christ: Marketing, Ritual, and Spectatorship in Mel Gibson's The Passion of the Christ***

◊ The unprecedented commercial success of Mel Gibson's 2004 film The Passion of the Christ sprang from innovations in grassroots marketing that forged a synergy among

independent film distribution outlets, Christian-based marketing firms, and churches and religious organizations throughout the United States. By tapping into vast and well-established networks of churchgoers and promoting the film as a unique opportunity for spiritual outreach, the film's producers shifted the financial burden of marketing the movie onto the country s churches and Christian leaders. The convergence of these interests thus served to transform the cinematic experience into a commodified ritual of atonement and redemption that spilled from the movie theater into church halls and community meeting places, and enabled Passion to become one of U.S. cinema's first Indie blockbusters

Jesse Schlotterbeck *(Cinema and Comparative Literature)* ***9/11 and Documentary Filmmaking***

◊ Documentary films about the attacks of September 11, 2001 conspicuously avoids the obsessive replayed televisual images of the towers hit, flaming, then falling. Looking primarily at 9/11 (2002), 11'09"01 - September 11 (2002) and the opening of Fahrenheit 9/11 (2004) I will analyze the way that each film formulates an alternative audio-visual approach to the dominant representations of the event as defined by television coverage. Two stylistic patters are present in all three works the replayed images of the attacks become a blind spot. The iconic images of the towers that morning are not repeatedly shown as they were on 9/11 but are more often scrupulously avoided and worked around. Secondly, these filmmakers display a heightened interested in the audio track's ability to convey the horrors of the event, absented from the televisual image. These films, particularly, explore sounds that lack an on-screen visible location.

Elaine Shenk *(Spanish and Portuguese)* ***West Liberty, Iowa: accommodation and resistance in a language contact community***

◊ This ethnographic study examines children's language selection strategies and the extent to which these practices reveal inequalities within their environment. Linguistic choices are not predictable based only on variables such as social class, gender, or geographic region; rather speakers make strategic choices which index, or point to, social factors. Languages are attributed value not only by their speakers for reasons of identity, culture, and self-expression, but also by outsiders, based on the possibility for conversion into economic, cultural or political capital (Bourdieu 1991). Academic institutions play a key role in establishing linguistic usage norms. In West Liberty, Iowa, where approximately 40% of the population is Spanish-speaking, a dual-language immersion program was implemented, thus validating and legitimating the use of a minority language in the socialization, linguistic and otherwise, of the students. The repercussions of this decision are significant in the shaping of both dominant and resistant ideologies of language.

Amy Spellacy *(English)* ***¿Qué Hay, Amigo? : Coca-Cola and Images of U.S. Imperialism during the 1940s***

◊ This presentation examines a series of Coca-Cola ads that offer insight into the relationship between domestic notions of neighborhood and community in the United States and U.S. foreign policy during the 1940s, focusing in particular on the relationship between a 1944 ad set in Panama and the U.S. Good Neighbor policy. I juxtapose Coca-Cola ads featuring international settings with ads that rely on domestic imagery to argue that a significant relationship existed between U.S. imperialism and domestic racial anxieties. In these ads, the domestic tropes of the soda fountain and the neighborhood, used to promote an association between the soft drink and an American way of life, reflect racially limited, exclusionary ideas of community that operated domestically and were exported to other parts of the world through U.S. imperial practices.

Elizabeth Sutton *(Art History)* ***"Naer het Leven" and the Emergence of Science: The Prints of Jan Huygen van Linschoten's Itinerario and Vesalius' De Humani Corporis Fabrica***

◊ Andreas Vesalius and Jan Huygen van Linschoten are names associated with discoveries. Vesalius is known for his observations of human anatomy, and Linschoten is known for documenting his travels to unknown places. Vesalius published De Humani Corporis Fabrica in Brussels in 1543. Only a little more than fifty years later, Linschoten's Itinerario was published in Amsterdam (1596). Both books included prints to illustrate the descriptive texts. Vesalius' anatomical treatise and its images were well-known in the sixteenth and seventeenth centuries. The growing interest in scientific inquiry was reflected in the travel accounts that explorers and merchants wrote and published when they returned from their journeys. Both of these new genres were based on observation and visual and textual description. It is my intent to discuss the stylistic, functional, and ideological relationships between the prints in Vesalius' medical manual and the images in Linschoten's travel account of his journey to the East Indies.

David Taylor *(Philosophy)* ***Rediscovering the C-Series: McTaggart's Lost Insight***

◊ It is not without irony that the man who most deserves to be called the father of analytic philosophy of time was a prominent Hegel scholar among whose deepest convictions was that time could not possibly be real. But while J.M.E. McTaggart's characterization of two ways of ordering positions in time, the A-series and B-series, is well-known, as is his argument that neither series can belong to reality, his discussion of the C-series, the atemporal structure in reality that grounds our misperception of the world as temporal, is much less-known. This paper briefly introduces McTaggart's ontology and the role the C-series plays in it. It argues that even if we reject his argument for time s unreality, we might still find the inspiration for a positive account of time in his discussion of the C-series. I indicate some of the advantages and challenges of interpreting McTaggart's theory on a realistic basis.

Megan Threlkeld *(History)* ***Imperialism and the "Non-Political Sex": Suffragist Responses to the War of 1898***

◊ This paper focuses on the intersections between suffrage and foreign policy by tracing the debate over the War of 1898 waged in the Woman's Journal, the preeminent periodical of the suffrage movement. The question of whether Cubans, Puerto Ricans, and Filipinos would be allowed to vote if those territories ever became states was taken very seriously by white American women who were denied the ballot themselves. The Journal printed a wide range of opinions, ranging from supporters of the war, who argued that if women had the ballot they could help shape foreign policy and ensure that the U.S. was acting in the best interests of foreign populations, to anti-imperialists, who countered that if women could vote, there would never have been a war in the first place. In different ways, both sides manipulated the issue of imperialism to advance their own arguments for woman suffrage in the United States.

Meghan Warner *(History)* ***Anti-Rationalism and Lunatic Prophets in 1960's America***

◊ One of the most significant features of 1960's American Counterculture is that they eschewed mainstream society, finding overly normative and technocratic. In creating an oppositional and alternative lifestyle, many hippies therefore chose to embrace subjectivity and even reject conventional logic itself, creating an anti-rational worldview. One manifestation of such beliefs was the Counterculture's embrace of anti-psychiatry, the idea that mental illness is nothing more than a label for those exhibiting nonconformist behavior, and that the insane are actually endowed with superior insight. Several works of fiction, in particular the novels One Flew Over The Cuckoo's Nest and Good Bless You Mr. Rosewater, the play Marat/Sade, and the film King of Hearts, illustrate this theme by using mad characters to critique contemporary western society.

Rachel West *(Musicology)* ***In the Beginning: La création du monde and Cultural Representation and Some Elements of Symbolism Within***

◊ Darius Milhaud's 1923 ballet La création du monde is a remarkable pastiche of various elements of arts from around the world American jazz, African creation myth, Western ballet and musical form, and primitivist art. While none of these elements were utilized authentically in this ballet (some concepts were modified from their original uses: performers, musical form, and story intent), the goal of the production was to evoke a sense of the exotic in the audiences of 1920s Paris. By blending together these various disparate elements, Milhaud and his collaborators Cendrars and Lèger created an audiovisual dance spectacle that is a collage of otherness.

Charles Williams *(American Studies)* ***I Say Tomato: Eros Magazine and the End of the Comstock Laws***

◊ This short multi-media presentation will give the audience a chance to hear about and participate in shaping my most recent project, a cultural history of Eros Magazine. Eros, a high-end mass produced erotica quarterly with a lot of big-name contributors, had a

subscription list of over 250,000 when Robert Kennedy's Justice Department indicted its publisher for distribution of obscenity through the U.S. Mails. The talk will present the audience with visual and background information, as well as a presentation of a few working hypotheses, and conclude with what I hope will be a fruitful question and answer period.

George Wrisley** (Philosophy) **The Viability of Kuhn's Later Notion of Local Incommensurability

◊ While he has continued to develop and refine his views since The Structure of Scientific Revolutions, for the length of Kuhn's philosophical career he has focused on trying to understand and account for belief and theory change by examination of the history of the sciences. Absolutely key to his later understanding of such change is his notion of local incommensurability, i.e., non-intertranslatability between localized parts of theories. It would not be an overstatement to say that if he is wrong about local incommensurability, the majority of his ideas on scientific progress are rendered lifeless. Because of its importance, I want to focus on answering three questions in this paper: What is Kuhn's later notion of local incommensurability? What are Donald Davidson's arguments against global and local incommensurability? Does Kuhn's later notion of local incommensurability survive Davidson's objections?

Mervat Youssef** (Journalism and Mass Communication) **An Orient Defying Borders: Constructing the Muslim Image in Europe on National Public Radio

◊ News media in modern times function as a mythmaker; they help societies make sense of events and construct reality. Developments on the international stage brought attention to Muslims and raised questions about the compatibility of Islam with democracy and modernity. Through a textual analysis of a series about Muslims in Europe, this study argues that National Public Radio mediated an image of Muslims in Europe, which suggests that Islam as a culture forms an Orient that is no longer bound by geography and exists in the Occident.

Social Science & Education

Brandon Abbs** (Psychology) **Is Overt Repetition Critical to Word Learning?

◊ To what extent can language learners acquire new words through mere exposure to word-referent pairings? In two experiments, participants were exposed to pairings of novel auditory word forms (the names) and pictures of novel objects (the referents). During this study phase, participants either (a) repeated the names, (b) did not repeat the names, or (c) did not repeat the names, but performed an attention-demanding task. Participants were tested for receptive learning (picking out the correct referent when cued with the

name) and expressive learning (producing the correct name when cued with the referent). The first experiment showed that overt repetition was necessary for long-term retention of expressive but not receptive learning. The second experiment extended these findings to four-syllable non-words where repetition was found to be detrimental, not beneficial, to expressive word learning. Clinical and educational implications for these findings will are discussed.

Caglar Akcay *(Psychology)* ***Sequential modulations of Simon Effect: Feature Integration or Conflict Adaptation?***

◊ Human information processing system is often prone to interference from irrelevant conflicting information in the environment. For example, when participants are required to make spatially defined manual responses signaled by a non-spatial stimulus dimension (e.g., color), they are faster when the stimulus location and the correct response location corresponds. This interference is also modulated by immediate contingencies in trial sequences, suggesting adaptive online adjustments in processing strategy in response to interference on last trial. However, an alternative to strategic adjustments has been put forward in the form of automatic priming by integrated stimulus-response episodes. In an experiment using the Simon effect we attempted to dissociate the predictions of these accounts. The results reveal that for a complete account of control in interference paradigms and integration of both kinds of mechanisms might be needed.

Alan Aldrich *(Library and Information Science)* ***Talking the Walk: An Analysis of State Library Mission Statements***

◊ This study examines the mission statements for 46 State Libraries in the United States. Mission statements allow for examining organizational action and subsequent influences for power and control. Libraries as institutions have to manage competing demands in terms of treating customers equally while also serving special needs populations. State Libraries are examined as first tier, second tier, or mixed tier libraries based upon their mission statements and are analyzed in how they manage these competing demands within their mission statements. Two hypotheses are set forth and tested. Mission statements were found to be institutionally vague. Ramifications of institutional vagueness are presented along with recommendations for future studies.

Robin Barry *(Psychology)* ***Non-Hostile Withdrawal during Marital Conflict in Newlywed Marriage***

◊ Non-hostile withdrawal is conceptualized as relatively neutral behavioral, cognitive and emotional strategies used by an individual to avoid or retreat from interpersonal conflict. One hundred and four newlywed couples reported on the frequency of their own use of non-hostile withdrawal when dealing with their most serious recurring marital problem. Non-hostile withdrawal was found to be distinct from trait-like detachment, avoidant attachment and hostile withdrawal. Non-hostile withdrawal was also found to be largely unrelated to negative temperament and both self-reported and observer-rated affect

during problem-solving interactions. Non-hostile withdrawal from marital conflict at six months of marriage was weakly related to concurrent marital satisfaction, depressive and anxiety symptoms for husbands, but unrelated for wives. Non-hostile withdrawal was also found to predict husbands marital satisfaction and depressive symptoms at 12 to 18 months of marriage. Thus, even at this early stage, non-hostile withdrawal from marital conflict has detrimental consequences for husbands.

Dan Caprar *(Management and Organizations)* ***Why People Believe (or Don't Believe) Our Research: The Role of Self Affirmation Processes***

◊ Evidence suggests that managers do not always follow prescriptions that emanate from academic research. One possible explanation that has received little attention is that managers might reject certain research findings because these findings pose threats to their self-esteem. This possibility is investigated in the current study, using people s reactions to a research-based essay arguing that employers should hire for intelligence because intelligence (or general mental ability, GMA) is the best predictor of job performance. Consistent with predictions from self affirmation theory, individuals with high levels of GMA were more strongly persuaded by the essay than were those with lower GMA. In addition, the relationship between individuals GMA and GMA-related beliefs was (a) mediated by test-taking anxiety and (b) more reliable for men than for women. Implications are discussed and suggestions for future research offered.

John Chambers *(Psychology)* ***Misperceptions in intergroup conflict: Disagreeing about what we disagree about***

◊ Two studies examined misperceptions of disagreement in partisan social conflicts, namely in the debates over abortion (with pro-choice and pro-life students in Study 1) and national politics (with Republican and Democrat students in Study 2). We observed that partisans tend to exaggerate differences of opinion with their adversaries. Further, we found that perceptions of disagreement were most pronounced concerning values that were most important or central to the perceiver s own ideology, whereas partisans perceived much less disagreement with respect to values central to their adversaries ideology. To the extent that partisans assumed disagreement concerning personally-important values, they were also inaccurate in perceiving their adversaries actual opinions. Discussion focuses on the cognitive mechanisms underlying misperceptions of disagreement and strategies for reducing intergroup conflict suggested by our data.

Tom Gilsenan *(Social Work)* ***Partners in peacemaking: Albert Einstein and Jane Addams***

◊ Jane Addams and Albert Einstein may seem unlikely partners. But during the 1920s and 1930s, they teamed up a number of times in the quest for world peace. Addams is best known as a founder of social work. Albert Einstein is best known for his work in physics. Both used their roles as public intellectuals to speak against war and urge countries to

turn to peaceful means of settling conflicts. At times, they worked together in these efforts. This presentation focuses on their joint efforts in peacemaking.

Lin Gu *(Asian Languages and Literature)* ***Investigating Learner-Generated Language-Related Episodes During Collaborative Pair Work***

◊ Focus-on-Form is a type of instruction that intends to achieve an integration of form and meaning by making learners focus on linguistic forms in order to solve communicative problems. It has been suggested that incorporating formal grammar teaching into communication-centered instruction can lead to improved performance in processing input and increased accuracy in production. However, learners role in drawing attention to form is usually disregarded. The present study attempts to investigate Language-Related Episodes where the attention to form arises incidentally out of learners searching for meaning and communication during collaborative pair work. The results of this study will render insights into the relationship among the types of classroom activities, Language-Related Episodes and linguistic forms attended by language learners, and broaden and deepen our understanding of learners need for form when their interlanguage system is sill undergoing constant reconstruction and development.

Holly Hansen *(Political Science)* ***Institutions or Identity: Ethnic Party Success in Eastern Europe***

◊ When is a political party representing a minority ethnic group likely to win seats in parliament? In this study, I compare two theories that may offer an explanation for why ethnic parties have been successful in some countries in Eastern Europe, but not in others. First, institutional power arrangements may be structured in such a way to be more conducive to ethnic and ethno-regional parties being particularly effective (Riker, 1964; Bunce, 1999). Second, ethnic identity may form a salient political cleavage in which groups in a society align (Horowitz, 1985; Gurr and Harff, 1994), therefore leading to increased political mobilization along ethnic lines. Running a logistic regression on 41 elections from 17 different countries in Eastern Europe, I find that both institutional constraints and identity variables matter in determining when ethnic parties receive seats in parliament.

John Humrichouse *(Psychology)* ***Self-Other Ratings, Trait Visibility, and Acquaintanceship: A Longitudinal Study of Newlywed Couples***

◊ The current studies investigate self-other ratings of newlywed couples on the Big 5, affectivity, adult attachment, and emotional expression over a 2-year longitudinal design. In Study 1, newlywed couples achieved significant agreement across all measures within the first 6 months of marriage, but none of the agreement correlations significantly increased by a 2-year follow-up (Study 2). Several potential moderators of agreement were tested but none consistently moderated agreement across traits and time. For both Study 1 and 2, agreement was highest for the Big 5 and the results are discussed in terms of the trait visibility effect. Furthermore, the interplay between the trait visibility effect

and acquaintanceship effect is emphasized, meaning that for couples to achieve moderate levels of self-other agreement on low visibility traits they must have a high level of acquaintanceship.

Hyun-Ju Kim *(Foreign Language and ESL Education)* ***Rating variability in Assessment Process***

◊ L2 oral tests are mostly measured by human raters and the test scores can be affected by raters' characteristics. Therefore, this study attempts to examine rater effects on English language oral proficiency tests focusing on two factors: raters' English backgrounds and their attitudes toward World Englishes (WEs). Through repeated measures of three-way analysis of variance (ANOVA), I examined whether there are significant differences in the ratings of non-native speakers' English language oral proficiency among different groups of raters. Results of this study showed that raters' attitudes toward WEs in language testing significantly affected their ratings of the speech samples. Based upon the findings in this study, theoretical and practical implications related to assessment of English language oral proficiency are discussed.

Robert Latzman *(Psychology)* ***Electrodermal Responding to Aversive Nonreward in Children***

◊ The current study was designed to determine whether different intermittent schedules of reinforcement with periods of extinction would have a differential effect on the electrodermal responding of children in the 8-10 year age range. Results indicated that children s EDRs immediately following the occurrence of reinforcement were a function of the inter-reinforcement interval, with greater EDR in responses to longer inter-reinforcement intervals. These findings were considered to be consistent with the research literature suggesting that long inter-reinforcement intervals can be aversive and evocative of aversively motivated behaviors.

Arul Mishra *(Marketing)* ***The Subversive Heart in the Human Mind: The Meddling-in of Affect in Information Integration***

◊ Extant research has explored the role of affect and cognition in decision-making and they are largely considered independent modules. However, one question remains unanswered; does task induced affective reaction influence the cognitive processing? This research is an attempt to answer this crucial question. Across four experiments, I find that affect meddles-in with cognitive processing and distorts the picture of the stimulus we form in our mind.

Himanshu Mishra *(Marketing)* ***How Come Good Things Always Happen to Bad People: Likelihood Assessments in Social Domains***

◊ This research documents an ironical finding where our belief in a just and orderly world makes us predict the contrary i.e. good things happening to bad people. In this article, I propose, and find evidence that individuals overestimate the likelihood of positive events

happening to disliked people. I suggest that this is due to the fact that violations of a just world schema attract more attention and rumination, resulting in an enhanced accessibility for instances inconsistent with a just world. This enhanced accessibility is utilized as a cue that increases the expectation of good things happening to disliked people. I report the results of three experiments that demonstrate and moderate the phenomenon and provide evidence for the underlying mental processes of rumination and accessibility.

Stephen Nemeth *(Political Science)* ***International Crises and Domestic Interest Group Activity***

◊ The role of the political environment on interest groups has been an area of focus for a variety of interest group scholars. The environment in which interest groups operate determines to a great extent their viability, their tactics, and the amount of resources at their disposal. On the domestic level, this has been well documented. However, little has been done to assess the impact of the international environment on interest group mobilization. In regards to the United States, our role in the world system makes our country particularly sensitive to international events. Using the ESA model developed by Gray and Lowery, I test the theory that international events such as crises provide energy that allow interest groups to have higher levels of contributions than in times of low salience. Results indicate that interest groups increase their contributions after times of international events, even when controlling for election years.

Valerie Nyberg *(Curriculum and Instruction)* ***Melting Pot Meets Tossed Salad: A Historical Examination of Culturally Relevant Pedagogy***

◊ This paper will trace the movement from a traditional, homogenized Eurocentric pedagogy in the United States to the more recent emphasis on ethnocentric otherized pedagogy. In simple terms, I will begin with what is commonly known as melting pot education which assumes that all students access knowledge from an equal position thereby affording them equal opportunities for academic inclusion and achievement. Then, I will extend my discussion to include another approach which has come to be known as tossed salad education which shifts the focus from the individual student to cultural responsive pedagogy based on the specific racial/ethnic culture of a community of students. Ultimately, I will consider the implications of why dichotomized (melting pot versus tossed salad) pedagogies continue fail to address the needs of all students in substantive ways as well as suggest an alternative pedagogy.

Ashleigh Richard *(Psychology)* ***Correspondence of Transsaccadic Memory***

◊ During everyday perception, we move our eyes around the visual world to direct the most sensitive region of the retina, the fovea, to objects of interest. During each eye movement, or saccade, vision is suppressed, and thus memory is required across eye movements to establish correspondence between objects visible on separate fixations. Saccades are often inaccurate, however, and the eyes fail to land on the saccade target object. We

hypothesized that memory across saccades plays a central role in correcting gaze after an inaccurate saccade, maintaining visual features of the target to support target identification and correction. In three experiments, a visual array was rotated during participants' eye movements so that the eyes landed between two objects, the saccade target and a distractor. Participants used memory very efficiently to identify the target and correct gaze to that object. In addition, interference with visual memory led to deficits in gaze correction.

Lia Schultz *(Educational Policy and Leadership Studies)* ***Heir to an American Education: An Intergenerational Framework for Investigating Education in the United States***

◊ This study presents an ethnographic framework for investigating education through the culture of one family over several generations. While historians and educators most commonly examine one institution, time period, academic subject, profession, or individual, the framework presented here allows for an examination of education within one family over hundreds of years. By using family trees, migration maps, and primary documents relating to education and literacy, educational biographies are created for subjects from each generation, allowing for posopographic (collective biographical) analysis. Through this archive of data, factors impacting education such as socioeconomic status, religion, gender, occupational choice, as well as the expectations of family and extended "kinship communities" may be examined, along with individual curricula, textbooks, and literacy samples.

Clayton Thyne *(Political Science)* ***Good neighbors, bad neighbors, and domestic disputes: The effect of interstate relations on civil war, 1948-1992***

◊ Recent papers examining the onset of civil war have made tremendous gains in our understanding of the causes of domestic conflict. This paper seeks to extend this work by investigating the effect of interstate relations on civil war. I argue that relations between states send signals to potential rebel organizations that affect their predicted probability of staging a successful rebellion. Hostile activity will embolden the potential rebel group, making civil war more likely. Friendly interstate relations, on the other hand, suggest that the sender is a potential ally for the government if a rebellion is attempted, which should lower the probability of rebellion. This theory is tested using COPDAB and WEIS events data from 1948 through 1992 along with variables for trade and military disputes to capture interstate interaction. Results indicate the day-to-day interstate interactions indeed have a significant impact on the probability of civil war.

Patricia Wade *(Educational Psychology)* ***The Relationship between Sexual Orientation and Performance on a Mental Rotation Task***

◊ Mental rotation, a visuospatial skill, is the ability to imagine a figure rotating in space without verbal mediation. Gender differences in the performance of mental rotation tasks are well documented but the relationship between sexual orientation and mental rotation

is uncertain. This study investigated the relationship between gender, sexual orientation and scores of 584 university students on the Vandenberg Mental Rotation Test. A two-way ANOVA (Gender x Sexual Orientation) of mental rotation data revealed main effects for gender, $F(1,578) = 13.62$, $p<.001$, and sexual orientation, $F(1, 578) = 10.09$, $p<.005$, and significant interaction between gender and sexual orientation, $F(1,578) = 8.68$, $p<.005$. Vandenberg mental rotation scores differentiated heterosexual male students from gay male, lesbian, and heterosexual female students. The group differences remained when mental rotation scores were covaried with the Masculinity-Femininity Scores of the Holland Vocational Preference Inventory. Group differences may reflect a complex combination of biological and psychosocial factors.

Todd Walker *(Economics)* ***Price Revelation and Forecasting the Forecasts of Others***

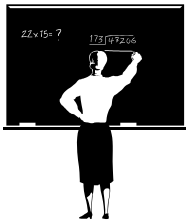
◊ The idea that asset prices can deviate from fundamentals has been suggested for well over a century. The famous economist John Maynard Keynes in The General Theory of Employment, Interest, and Money (1936) described a situation where investors must forecast the forecasts of other investors and likened asset markets to beauty contests. However implementing this idea of asymmetric information in a technical model of asset pricing is very challenging due to the problem of infinite regress in expectations. That is, rational investors are forced into a situation where they must forecast the forecasts of other agents into the infinite future. This paper demonstrates how this problem can be overcome and information structures previously believed to lead to disparate expectations in equilibrium (e.g., Singleton (1987)), are shown to converge to a symmetric equilibrium. This paper also contributes to the expanding literature concerning information dissemination in models with disparately informed traders. Asymmetric information cannot be sustained in equilibrium due to the revealing nature of the price process.

Joshua Weller *(Psychology)* ***A decision neuroscience study of the role of emotion under varying levels of risk and ambiguity***

◊ We study the role of emotion in decisions under ambiguity and decisions under risk. Individuals with brain lesions to areas responsible for processing emotions perform poorly in decisions under ambiguity (i.e. when outcome probabilities are unknown). However, earlier studies ignored how these individuals respond when probabilities are known. We compared performance on the IGT, a task designed for decisions under ambiguity, and a risky decision task, the Cups task , in a sample of patients with damage to the VMPFC or the somatosensory cortex. Performance in the Cups task was positively associated with IGT performance. While all lesion patients performed poorly on the IGT, there was differential performance on the Cups task. Patients with somatosensory lesions generally performed poorly on the Cups task, while VMPFC patients performance varied as a function of lesion localization. We conclude that decisions under ambiguity are emotionally-based, whereas risky decisions may rely more on cognitive processes.

Ryan Wells** (Education) **Education and Democratization after the Cold War

◊ The collapse of the Soviet Union marked the end of the Cold War as well as the world s only viable alternative to democracy. Across sub-Saharan Africa increased democratization has been highly significant and across the world over 100 countries have transitioned to more democratic forms of government. Grounded in socialization and institutional theories this paper specifically examines the period from 1989-2002 to determine whether educational expansion may, in part, have been responsible for the increased democratization in sub-Saharan Africa and the world more broadly. This study extends past research by studying a more recent time period and utilizes methods that will easily lead to comparative analysis with past research. The study finds that contrary to the established theories, education did not significantly affect the increase in democratization in the world after the Cold War. The implications for policy and future research are presented.



Biological & Health Science

Laura Acion (Biostatistics) ***Anhedonia in Multidrug-Resistant Tuberculosis HIV-negative patients***

◊ Research has established that Tuberculosis (TB) patients are likely to have treatable depressive disorders. Objective: To describe the characteristics of depressive disorders associated with TB in HIV-negative patients. Methods: We interviewed 23 TB and 9 multidrug-resistant TB (MRTB) patients at an Argentinean center. Ten patients receiving rehabilitation services for traumatological injuries served as a comparison group. The evaluation included a psychiatric interview supporting DSM-IV diagnosis and scales measuring different aspects of depressive disorders (e.g. anhedonia, apathy). We also obtained measures of socioeconomic, demographic and quality of life factors. Results: The frequency of depressive disorders was significantly higher among MRTB patients than in TB patients and traumatological controls. MRTB patients presented significantly higher scores of anhedonia when compared to the TB or the comparison groups. This finding remained significant after accounting for possible confounders. Conclusion: This study suggests that depressive disorders and anhedonia are psychiatric complications of MRTB.

Tami Argo *(Clinical and Administrative Pharmacy/Epidemiology)* ***Infection Risk Among Patients Receiving Long-Term Clozapine Treatment***

◊ Clozapine, an antipsychotic, can cause agranulocytosis. While patients who develop significant neutropenia are clearly at risk for infection, it is unknown whether patients who fail to reach the hematological monitoring thresholds for clozapine discontinuation are also at some increased risk for infection. Previous report showed increased numbers of antibiotic prescriptions in the two years following clozapine initiation, compared to the two years prior to clozapine, among a group of chronically hospitalized patients. This analysis uses de-identified Medicaid outpatient claims data from the State of Iowa, fiscal years (FY) 1990 through 2001. In subjects who met inclusion criteria, no significant differences in presence of antibiotic claims before or after clozapine initiation was seen (McNemar s Statistic 2.27, p=0.13). No significant differences were found in the number of antibiotic claims before and after clozapine initiation (t=0.70, p=0.49). In our groups of outpatients, antibiotic use did not appear different between pre and post-clozapine use.

Hind Baydoun *(Epidemiology)* ***Role of Human Leukocyte Antigen Sharing in Recurrent Spontaneous Abortions***

◊ Primary recurrent spontaneous abortion (pRSA) is defined as three or more consecutive miscarriages conceived with the same partner in the absence of uterine, genetic or autoimmune abnormalities. Evidence suggests that Human Leukocyte Antigens (HLA), specifically maternal-fetal sharing of HLA alleles, may play a key role in pRSA. However, the specificity of HLA alleles responsible for or linked to pRSA susceptibility genes remains unclear. Previous studies used HLA couple sharing as proxy measure for maternal-fetal sharing. We conducted a meta-analysis of thirteen case-control studies focusing on HLA allele couple sharing as a potential risk factor for pRSA. A slightly increased and significant risk of pRSA was observed among couples who shared at least one allele at HLA-DR locus, but not at other HLA loci. Adequately powered studies are needed, which employ standard definitions and reproducible methodologies to directly assess the role of maternal-fetal HLA sharing on the risk of RSA.

J. Caldwell *(Biological Sciences)* ***Characterization of chordotonal dysfunction in Drosophila melanogaster***

◊ It has been previously shown that the chordotonal mechanosensory neurons are involved in Drosophila audition and that mutations that disrupt these structures produce flies with varying degrees of deafness and coordination defects. I have undertaken a candidate gene approach to identifying the Beethoven deafness gene. The btv mutation alone produces near-complete deafness and sedentary behavior in adults; however, mapping of the Beethoven mutation with overlapping chromosomal deficiencies uncovered two additional phenotypes; male sterility and reduced ocelli (the simple photoreceptors). I have been investigating three candidate genes in the btv region, polytene 36DE on Chromosome 2L; 1) a novel Neural-Cadherin molecule (NCad2), 2) a transmembrane receptor serine/threonine kinase, Pray for Elves (PFE), and 3) a putative transcription

factor, elfless (mse). Ultimately, these genes were not found to encode btv, but their characterization has been of interest for defining the limits of the btv region as well as for attributing function to the remaining phenotypes found in the minimal overlapping deficiencies.

Dwight Ferguson *(Epidemiology)* ***Sex hormones and the estrogenic effects of Organochlorines and Polycholrinated biphenyls***

◊ The biologic and toxic effects of organochlorines, OC's, and their metabolites are due in part to their ability to interact with several cellular and nuclear receptors, altering signaling pathways and gene transcription. These effects include endocrine modulation or disruption. The authors evaluated blood levels of 48 persistent organochlorines, among 58 newly diagnosed untreated prostate cancer cases and 99 controls. Adjusting for age, body mass index and history of prostatitis, oxychlordane and PCB 180 were associated with prostate cancer status. Examining the association between sex steroid hormone levels, OC levels and prostate cancer status, a consistent inverse association was noted between organochlorine levels and sex steroid hormone levels. These associations were most consistent for lipid adjusted OC levels and DHEA regardless of prostate cancer status. These findings are consistent with the hypothesis that OC's may act as human carcinogens by mediating sex steroid hormones.

Andrea Frank *(Psychology)* ***The necessity for identity in training symmetry to pigeons***

◊ Previously it was found that pigeons can show a symmetrical relation (A=B; B=A) when identity training is intermixed with arbitrary training from the outset of training after controlling for the spatial and temporal location of visual stimuli. In the current presentation, it will be shown that controlling for temporal location of visual stimuli is not sufficient for pigeons to show a symmetrical relation indicating that identity might be necessary for such a relation to be shown.

Sumaya Hamadmad *(Pharmacology)* ***Erythropoietin signal transduction requires protein geranylgeranylation***

◊ Erythropoietin (Epo) acts through the erythropoietin receptor (EpoR), a member of the type-1 cytokine receptor family, to influence survival, proliferation, and differentiation of erythroid progenitors. Epo stimulation of EpoR-transfected murine 32D cells results in phosphorylation of many proteins including Jak2, Stat5, and Erk. Depletion of mevalonic acid by 24 hour incubation with 20 mM lovastatin, an inhibitor of hydroxymethylglutaryl Coenzyme A reductase, impairs Epo-induced phosphorylation of Jak2, Stat5 and Erk. Under these conditions there is inhibition of Stat5 nuclear translocation and DNA binding as assessed by gel shift assay. The addition of 5 mM mevalonic acid restores phosphorylation of these proteins upon Epo stimulation. Interestingly, the addition of geranylgeranyl pyrophosphate, but not farnesyl pyrophosphate, to lovastatin-treated cells restores the Epo-induced phosphorylation of all of these proteins. Selective inhibition of

protein geranylgeranylation with 30 mM of the geranylgeranyl transferase inhibitor, GGTI 286, mimics the effect of lovastatin whereas 30 mM of the farnesyl transferase inhibitor, FTI 277, does not impair Epo-induced protein phosphorylation. These results indicate that Epo signal transduction requires protein geranylgeranylation. Ongoing studies are defining the specific protein(s) that mediates this effect.

Ben Hippen *(Dermatology)* ***Precursors of the lipid water barrier of skin progress through distinct cellular compartments during keratinocyte differentiation***

◊ Human epidermal cells (keratinocytes) undergo a dramatic transformation during their life cycle, developing from living, dividing cells into the nonliving corneocytes of the outermost skin layer. Crucial to this process is the secretion of lipids that are essential to epidermal water barrier function. In both intact tissue and culture models, differentiated epidermis is a complex three-dimensional cell system. This complexity, along with the impermeability of differentiated cultures, presents unique experimental challenges to understanding keratinocyte cell biology. We have developed a culture system in which we can label intracellular structures in differentiating keratinocytes. Using antibodies directed against key antigens involved in transport of lipid barrier precursors, we are able to demonstrate the sequential sub-cellular localization of important proteins and glycolipids during differentiation. Culture samples are photographed using confocal laser-scanning microscopy, allowing us to image sub-cellular structures in a model system that approximates the differentiation of keratinocytes in human epidermis.

Michael Hitchler *(Free Radical and Radiation Biology)* ***Expression of Manganese Superoxide Dismutase in Breast Epithelial Cells***

◊ Expression of the antioxidant enzyme superoxide dismutase (MnSOD) is often down-regulated in breast cancer. Decreased levels of MnSOD and a mutant p53 have been shown to attribute to the malignant phenotype associated with invasive breast cancers. Currently there is conflicting evidence about the role of p53 in regulating the transcription of MnSOD. Recently, a putative p53 binding site was identified in the promoter of MnSOD. Using quantitative real time PCR the level of MnSOD mRNA was found to be several fold higher in the immortalized breast epithelial cell line MCF-10A over the breast tumor derived MDA-MB-231. Over-expression of p53 by Adenoviral transduction in MCF-10A and MDA-MB-231 did not significantly increase the steady state levels of MnSOD mRNA. We conclude that MnSOD is not a direct target of p53 in breast epithelial cells.

GunHee Kim *(Pharmacology)* ***Effects of Diminished Lipoprotein Availability on Protein Prenylation in Intact Cells***

◊ The isoprenoid and salvage pathway synthesize non-sterol isoprenoids (FPP and GGPP). These isoprenoids are substrates for protein prenylation and sterol synthesis. It is known that limited mevalonate, the precursor of isoprenoids, are preferentially incorporated into the non-sterol synthesis including protein prenylation. We also demonstrate that

geranylgeranylation-related processes are sustained while farnesylation-related processes are altered with mevalonate depletion in HepG2 cells. This study was designed to study the effects of diminished lipoprotein availability on protein prenylation utilizing lipoprotein deficiency serum (LPDS), lovastatin, and exogenous mevalonate. Diminished lipoprotein availability sustains expression of geranylgeranylated proteins favorably than that of farnesylated proteins. Interestingly, LPDS/lovastatin treated cells less altered expression of proteins and increased FPP and GGPP levels than serum/lovastatin treated cells. Data demonstrated that diminished lipoprotein availability override the rate-limiting step of the isoprenoid pathway and may affect the signal transduction via small GTPases. It implies that significant consideration on choice of cholesterol lowering agents and diet is required in clinics where farnesylation inhibitors are administered.

Tomaz Koprivnjak *(Microbiology)* ***Cation induced transcriptional regulation of the dlt operon of Staphylococcus aureus***

◊ Lipoteichoic and teichoic acids (TA) are anionic cell envelope-associated polymers containing repeating polyglycerol phosphate moieties. Substitution of TA with D-alanine modulates many cell envelope-dependent processes such as activity of autolytic enzymes, binding of divalent cations and susceptibility to innate host defenses. D-alanylation of TA is diminished when bacteria are grown in medium containing increased NaCl concentrations, but whether NaCl affects the expression of the dlt operon encoding proteins mediating D-alanylation of TA is unknown. We demonstrate that S. aureus transcriptonally represses dlt expression in response to Na+, Mg2+ and Ca2+, but not sucrose. Changes in dlt mRNA are induced within 15 min and sustained for several generations of growth. Mg2+-induced dlt repression depends on the ArlRS two component system. The dlt transcript begins 250 bp upstream of the dltA start codon and includes an open reading frame upstream of dltA that is conserved in many Gram positive bacterial species.

Katarina Kulhankova *(Occupational and Environmental Health)* ***Role of Complex Environmental Exposures in Etiology of Allergic Airway Disease***

◊ Humans are exposed to environmental pollutants since their birth. Health effects of multiple toxicants acting upon a developing organism have not been studied yet. This murine model was developed to investigate the health effects of the two most important indoor air pollutants, endotoxins and cockroach allergens. Newborn mice were intranasally exposed to 1) cockroach allergens (Bla-g), 2) endotoxin, or 3) a mixture of Bla-g and endotoxin. Degree of lung inflammation documented by total cells, eosinophils and neutrophils recovered from bronchoalveolar lavage, as well as systemic production of immunoglobulin E in a mixture exposure group were significantly greater than in groups treated by Bla-g or endotoxin. In conclusion, airway exposure to a complex mixture of cockroach allergens and endotoxins resulted in significantly aggravated respiratory and systemic responses compared to exposures to each of these substances alone. These results underline a need to study the health effects of environmental pollutants in a context of complex environmental exposures as they occur in real life.

Wuan-Jin Leu *(Clinical & Hospital Pharmacy)* ***Evaluation of cumulative antimicrobial susceptibility data and resistance rates in US hospitals***

◊ The National Committee for Clinical Laboratory Standards (NCCLS) published guidelines for the analysis and presentation of antimicrobial susceptiblity test data in 2000 and 2002. We evaluated how well hospitals adhere to these guidelines over time. We surveyed hospital laboratories in 2001 and 2003, requesting submission their most recent antibiograms. We received 313 and 277 evaluable antibiograms from each survey. We used two evaluation forms to reflect the NCCLS guideline criteria for 2000 and 2002. Antibiograms were evaluated using 30 criteria, specified in the NCCLS guidelines and a total score determined for each antibiogram. Antibiograms published in 2002 had better adherence to the guidelines compared to those published in 2000 (total score: 21.63 vs. 21.17., p=0.003). Hospitals also showed improvement in implementing the new criteria that were added to the 2002 guidelines ($p<0.005$). Adherence with recent guidelines for publication of antibiograms could be improved. Organizational factors associated with improving use of antimicrobial susceptibility data need further study.

Wei Li *(Genetics)* ***AP-2 transcription factors function at multiple steps of zebrafish neural crest***

◊ Activator Protein 2 (AP-2) is a family of transcription factors that in mammals has five members (alpha, beta, gamma, delta, and epsilon); all appear to bind to a consensus DNA motif. mIn all vertebrates thus far analyzed, AP-2alpha is expressed in premigratory neural crest. Loss of function studies in zebrafish and other animals have shown that AP-2alpha is necessary for development of melanophores and other neural crest derivatives. In order to clarify the role of AP-2 transcription factors in early neural crest development; we constructed a dominant negative AP-2 (dnAP-2). Forced expression of this variant eliminates all premigratory neural crest, and this effect appears to be cell-autonomous. We are testing the effect of driving expression of dnAP-2 in melanophores and Rohon-Beard neurons. In order to assess the dynamic distribution of AP-2 activity in early embryogenesis, we also built a reporter of AP-2 activity by fusing three consensus AP-2 binding sites upstream of a minimal promoter and the gene encoding destabilized GFP. In transient transgenic embryos, GFP expression is seen only in cell types in which AP-2alpha is detected.

Gumei Liu *(Neuroscience)* ***Adeno-Associated Virus Type 4 (AAV4) Mediates Functional Correction of CNS Disorder in A Murine Lysosomal Storage Disease Model***

◊ In this study, we tested if AAV4 could mediate global functional and pathological improvements in a murine model of mucopolysaccharidosis type VII (MPS VII), caused by b-glucuronidase deficiency. AAV4 vectors encoding b-glucuronidase were injected unilaterally into the lateral ventricle and transduced the ependyma specifically. Both areas adjacent to the injection site, e.g., the hippocampus, and remote, such as the

cerebellum and brainstem, showed elevated enzyme activity and resolution of lysosomal storage. MPS VII mice show impaired context discrimination in context fear conditioning tests, which was reversed six weeks after AAV4 injection. Immunohistochemistry for CD31and b-glucuronidase revealed close association of recombinant enzyme and brain microvasculature. Our data show that AAV4-transduced ependymal cells serve as "enzyme pumps" and secret b-glucuronidase into surrounding brain parenchyma and cerebrospinal fluid (CSF). b-glucuronidase was delivered globally via perivascular space and resulted in widespread correction. Together, our proof-of-principal experiments suggest a unique and efficient manner for treating CNS deficits in LSD patients.

Yifei Liu *(Clinical and Administrative Pharmacy)* ***Drug Information Seeking Intention and Behavior after Exposure to Direct-to-Consumer Advertisement (DTCA) of Prescription Drugs***

◊ Objective: To identify predictors of patients' intentions and behaviors to seek drug information from physicians, pharmacists and the internet after DTCA exposure. Methods: 1,000 patients were randomly selected from 2,900 nationwide osteoarthritis patients. A self-administered survey examined predictors of intention, including constructs of theory of planned behavior, self-identity, DTCA exposure and control variables. After six weeks, another survey measured behavior. For patients exposed to DTCA, six multiple regressions were performed for intention and behavior for three information sources. Results: The response rates for the first and second surveys were 61.94% and 80.07%, respectively. 454 patients reported exposure to DTCA. The consistent positive predictors of intention were attitude toward behavior, self-identity, attitude toward ads and pain, while the consistent positive predictors of behavior were intention and pain. Conclusions: There might be no barriers to perform DTCA-prompted drug information seeking. To promote information searching, efforts could be made to affect factors predicting intention.

Banoo Malik *(Biological Sciences)* ***Phylogenomic analyses reveal an early origin of meiosis in protists***

◊ Meiosis is a defining feature of eukaryotes that distinguishes them from prokaryotes, but its evolutionary history is poorly understood. Meiosis is the process by which cells halve their ploidy by undergoing a reductional division followed by an equational division, giving rise to haploid cells. Meiosis is central to sexual reproduction, which is unique to eukaryotes. While previous work suggest that meiosis occurs in some animals, fungi, plants (AFP) and protists, they lacked power in distinguishing total asexuality from covert sex. Our work takes the novel approach of looking in the genomes of diverse eukaryotes, especially protists, for homologs of meiotic genes. Our results show that many meiotic genes have evolved by gene duplications early during eukaryotic evolution, and that meiosis-specific genes are found in diverse protists as well as in AFP. Our results also indicate that some putatively asexual protists have conserved meiosis-specific genes, thus may undergo hitherto unobserved meiosis.

Paulina Mena *(Biological Sciences)* ***Effects of Chromosomal Rearrangements on Patterns of Sequence Variation in Drosophila americana***

◊ Inversions are chromosomal rearrangement that can be associated with complex adaptation. My model system Drosophila americana, possesses a derived chromosomal arrangement consisting of a centromeric fusion between the autosomal fourth with the X chromosome. The X/4 fusion and the standard arrangement are distributed along a latitudinal cline, where the fusion is found at high frequency at northern latitudes and it appears to be absent from the south. This species also has several polymorphic inversions. The inversion Xc is tightly linked to the X/4 fusion, and therefore will show a similar clinal distribution. In this study I determine what effects these rearrangements have over the patterns of sequence variation on the X chromosome. I found that the rearrangements do influence the patterns of sequence variation resulting in population differentiation and loss of variation in the derived arrangements. Also, the effects will be stronger in regions of low recombination.

Ethan Mohns *(Psychology)* ***The Ventrolateral Preoptic Area and Basal Forebrain Play Opposing Roles in the Descending Modulation of Sleep-Wake Cyclicity in Infant Rats***

◊ Recent findings indicate that the ventrolateral preoptic area (VLPO) and/or basal forebrain (BF) may mediate the elongation of sleep bouts between postnatal day two (P2) and P8 in rats. The purpose of the present study was to investigate both the individual and the combined contributions of these two areas to infant sleep-wake cyclicity. Bilateral electrolytic lesions of the VLPO or the BF were made in P8-10 rats, as well as combined lesions of both structures (VLPO+BF). In addition, extracellular neuronal activity was recorded from these structures in vivo to further characterize their contributions to infant sleep. Finally, to examine the possible contributions of these areas at P2, transections caudal to the preoptic hypothalamus were made and sleep-wake cyclicity was examined. Results indicate that the VLPO and BF are active during early ontogeny, and have opposing descending modulatory effects on sleep-wake cyclicity.

Kirill Nourski *(Neuroscience)* ***Simultaneous and post-stimulatory effects of acoustic noise on the auditory nerve electrically-evoked compound action potential***

◊ Combined electric and acoustic stimulation (EAS) is a promising approach to improve the performance of cochlear implants in patients with residual hearing. In such patients, there may be auditory nerve fibers responsive to both acoustic and electric stimuli. Understanding of interactions between the two types of stimuli in the auditory periphery is important for developing EAS paradigms. The present study addressed masking of the auditory nerve electrically evoked compound action potential (ECAP) by acoustic noise in the guinea pig. Simultaneous masking featured an onset effect followed by a decrease to a steady state, characterized by a double exponential function. The amount of masking increased with both masker and probe level. Post-stimulatory ECAP recovery was non-monotonic and could be characterized by a three-component exponential function with

two positive and a negative component. The data indicate that acoustically-induced response desynchronization and adaptation mechanisms may contribute to acoustic-electric interactions in the auditory nerve.

Hua Ou *(Speech Pathology and Audiology)* ***The effect of low frequency car noise on hearing aid output***

◊ The sound inside a moving car contains a large amount of energy that can be picked up by hearing aid microphones. However this energy is below the effective response range of hearing aid receivers (100-200Hz). Although amplification of this frequency range is rarely intended or desirable, it is possible that these signals could activate or further bias an already active compression system. The current study was designed to determine energy at remote lower frequencies has an influence on the output provided at higher frequencies, using a small number of hearing aids representing an array of circuit parameters. It is found that low frequency energy can reduce higher frequency output of some hearing aids. Compression parameters (release time, attack time, OSPL-90 and hearing aid gain) are most strongly related to the effect. Speech Audibility can be compromised by low frequency energy.

Jana Peterson *(Community & Behavioral Health)* ***Differential Effects of Active Living on Quality of Life at Various Levels of Income***

◊ This study used a moderator model to examine the effects of active living on the physical components of health-related quality of life among a randomly selected sample of rural residents (n=407) from the Midwestern U.S. Results showed that active living had a greater impact on health-related quality of life for those reporting lower income. The magnitude of effect of active living on the overall physical component score for the low-income group was over two times the effect on the high-income group. Although active living behaviors have been demonstrated to be less prevalent among those of low socio-economic status, this group may have the most to gain from these activities. Findings highlight the need for increased and specifically targeted promotion of active living interventions. Implications of the study and directions for health promotion practice are presented.

Sandhya Shankarnarayan, Hyunjeong Jeong, Zhijian Li, Robert Deschenes, and Jan Fassler *(Biological Sciences and Biochemistry)* ***Perturbations of the cell wall of the bakers yeast Saccharomyces cerevisiae, leads to the activation of the SLN1-SKN7 signal transduction pathway***

◊ The structure and composition of the yeast wall is dynamic allowing for morphological changes during the cell cycle and in response to damage caused by environmental fluctuations. Our screening of the yeast deletion collection identified the cell wall protein, Ccw12p as a potential regulator of the SLN1-SKN7 pathway. The SLN1-SKN7 pathway consists of the membrane based 'sensor', Sln1p; the phosphorelay protein, Ypd1p, and the transcriptional activator, Skn7p. All three proteins in the pathway are activated by

phosphorylation. Phosphorylation of Skn7p leads to changes in expression of genes involved in cell wall composition and cell cycle regulation. We have considered two models for the basis of Ccw12p regulation of the SLN1-SKN7 pathway. In the first model, changes in the composition and structure of the wall weaken the wall, allowing stretching of the membrane, leading to activation of the pathway. In the second model, the presence, abundance, modification level and/or distribution of the Ccw12 protein in the wall constitutes a specific (ligand-like) regulator of Sln1p kinase activity. The results of experiments addressing these models will be discussed.

Siu Wah Wong-Deyrup *(Chemistry)* ***Creating an artificial enzyme: Activity of a novel dimeric metalloprotein towards DNA***

◊ In our efforts to engineer a DNA binding and cleaving protein with greater sequence discrimination, we have designed a dimeric protein derived from engrailed homeodomain and calmodulin. Previous work in our group has shown that a hydrolytically active lanthanide binding site can be incorporated into a DNA binding motif based on the structural similarity of the helix-turn-helix motif (HTH) in homeodomains and the EF-hand motif in calmodulin. In order to improve the sequence selectivity of the chimeric complex, we have designed a lanthanide-binding homodimer through insertion of an amino acid linker between two chimeric proteins. The novel dimeric protein was expressed and purified, and its size and purity were confirmed via MALDI-MS and dynamic light scattering experiments. Circular Dichroism assays (CD) and Fluorescence titrations with Europium (III) ion were used to investigate the metal-binding properties, and its structure as a function of the metal. The protein's strong DNA affinity and its double-stranded cleavage activity towards DNA in the presence of Europium are striking. Making it the first example of a de novo-designed hydrolytic artificial nuclease.

Lei Yu *(Free Radical and Radiation Biology)* ***Application of quantitative RT-PCR to promoter activity reporter assay***

◊ Promoter activity assay is widely used to demonstrate the key element of promoter region in gene expression studies. Traditional methods include chloramphenicol acetyltransferase (CAT) and firefly luciferase activity measurement. These methods use reporter gene product activity to reflect the promoter activity. In our study, we apply a more direct method to measure promoter activity than is currently available. We cloned the target promoter region into a reporter vector which encoding a destabilized green florescent protein (half life 2 hours). Quantitative real-time PCR was applied to measure the mRNA level of this reporter. The promoter activity was calculated by normalizing reporter mRNA level to that of neo/kan resistant gene driven by SV40 promoter within the same vector. Our method directly measures the transcriptional activity of the promoter sequence, and reduces the other interference to minimum level, thus providing a more direct and relevant measure of transcriptional activities than current methods.

Yongming Zhao** (Clinical & Administrative Pharmacy) **Factors Influencing Pre-ESRD Anemia Treatment with Erythropoietin in Elderly Hemodialysis Patients

◊ Most elderly patients with chronic kidney disease progress to end-stage renal disease (ESRD) with anemia untreated even though guidelines advocate anemia treatment with human recombinant erythropoietin (EPO). The objective was to identify factors affecting pre-ESRD anemia treatment defined as EPO treatment in the year prior to hemodialysis initiation among elderly patients. A cross-sectional study was performed with a study population aged 67+ years and initiating hemodialysis in the years 1996-1999. Only 12.18% of elderly patients took EPO treatment at least once in the year before the start of hemodialysis. There was significant variation in pre-ESRD EPO treatment rates across local areas. Multiple logistic regressions indicated patients living in an area close to a nephrologist had a significantly higher likelihood of receiving pre-ESRD EPO therapy. Patients access to local nephrologists may play an important role in determining pre-ESRD EPO therapy in elderly hemodialysis patients.

Math, Physical & Engineering Sciences

Alina Bejan** (Computer Science) **Adaptive, Self-Optimizing DHTs

◊ Various studies on request patterns in P2P networks have confirmed the existence of the interest-based clusters. Some P2P networks that exhibit the small-world phenomenon contain clusters of peers that frequently communicate with one another. The existence of interest-based clusters opens up the possibility of more efficient routing. We consider the problem of designing a self-optimizing overlay network and routing mechanisms to permit efficient location of resources by the periodic profiling of request patterns. Our self-optimization protocol uses selective replication of resources for restricting the sizes of the clusters, and proposes the deployment of inactive nodes for further reduction of the routing latency. The self-optimization protocol is demonstrated on the Chord network. It leads to a routing latency that scales with the size of the clusters.

Tomislav Friscic** (Chemistry) **Construction of molecules using linear templates in crystals

◊ The solid state provides a highly ordered environment for conducting molecular syntheses. Due to the absence of long-range molecular movement, the stereochemistry of products in solid-state reactions is largely predetermined by the positioning of molecules in the reactant crystal. However, due to the difficulties related to predicting and designing the orientation of molecules in crystals, solid state has not been extensively used as a reaction medium. Template-controlled solid-state synthesis combines the principles of supramolecular chemistry and solid-state chemistry to overcome the difficulties of positioning molecules in the solid state. The approach utilizes bifunctional molecules, such as resorcinol derivatives, as linear templates to position carbon-carbon double bonds for a [2+2] photodimerization within molecular assemblies in the solid state. This contribution will illustrate the application of template-controlled solid-state approach for

the quantitative construction of molecules having diverse shapes and sizes, specifically para-, meta- and ortho-cyclophanes.

Tamara Hamilton *(Chemistry)* ***A Ligand Constructed in the Solid State Gives Rise to Metal-Organic Polygons and Polyhedra***

◊ The solid state affords a degree of synthetic control over regio- and stereochemistry that is difficult to achieve in solution. We have reported the isolation in 100% yield and gram quantities of a tetrapyridyl cyclobutane ligand with two 2-pyridyl groups and two 4-pyridyl groups, by template-directed solid-state synthesis. The ligand is polyfunctional, offering chemically distinct binding sites, both chelating and monodentate. The polyfunctional nature of the ligand allows one set of pyridines to be selectively turned off during the self-assembly process depending on the anion or metal present. This allows the formation of assemblies with differing geometry (e.g. polygons, polyhedra). To our knowledge, the ability to form polygonal (2D) and polyhedral (3D) assemblies using the same organic ligand has not been observed in the field of coordination-driven self-assembly and possibly opens doors to applications in molecular information processing and anionic guest release.

Luke Haverhals *(Chemistry)* ***Simultaneous Detection of Ethanol and Smoking By-Products with Fuel Cell Based Sensors***

◊ Fuel cells are predominantly used for power generation, but they are also used as sensors that measure ethanol in aspirated breath. The sensors must be both sensitive and selective; it is the selectivity that is remarkable in a matrix as complex as human breath. Sensors respond to very few components other than ethanol; the most common interferent is a by-product of cigarette smoking. An algorithm is presented to quantify ethanol and smoke by-products. When samples are generated for simultaneous ethanol and smoke by-products, the algorithm allows the ethanol and smoke by-product levels to be determined independently. Ethanol can be quantified when the signal for the smoke by-products is 50x that of the ethanol. Ethanol levels can be determined to 0.01 BAC. Coupling of fuel cell based sensors and the appropriate algorithm may allow breath-based sensors to be developed for other analytes.

Hyunggun Kim *(Biomedical Engineering)* ***Dynamic Element Analysis of Bioprosthetic Heart Valves Using an Experimentally Derived Nonlinear Material Model during the Opening Phase of Cardiac Cycle***

◊ The importance of comprehensive understanding of the characteristics of bioprosthetic heart valves (BHV) cannot be overemphasized to overcome the structural failure of BHV. In this respect, it is important to utilize a realistic nonlinear material model in the finite element (FE) analysis of BHV for an accurate numerical simulation. We conducted a successful FE implementation of an experimentally derived constitutive model. Three-dimensional dynamic FE analysis of a pericardial BHV was performed under physiological conditions to accurately compute the extent and location of the stress

development on moving leaflets. The stress distribution showed that instantaneous high stresses were generated in the free end edge region with sharp bending deformation and then both sides of the boundary region became the primary high stress area. This dynamic FE study will be able to aid in design changes/new design development to improve the functional characteristics as well as durability of BHV.

Ahmed Lachhab *(Civil & Environmental Engineering)* ***Measurement of Velocity and Dispersion of Conservative Tracer in a Porous Media by means of three-Dimensional Particle Tracking Velocimetry***

◊ In dealing with contaminant movement in subsurface environment one has to know how contaminants behave in porous material. The knowledge of these processes helps resolve the problem of pollutants dispersion. The opaqueness of these formations obstructs the precise measurement of inner dynamic processes. This work is about conducting an experiment with an innovative, non-invasive technique to measure fluid velocity field and tracer dispersion in a porous medium model. The novelty of this experiment is that the porous medium consists of transparent material which was made of borosilicate glass beads and a Refractive Index matched mineral oil. We will implement a video-based technique to measure fluid velocity, and dispersion of a conservative tracer. The results will serve to broaden the knowledge of generic flow processes, assessment of proposed CFD codes, or assistance to improve CFD codes. The resulted data will be compared to stochastic analysis and numerical simulations.

Yi-Ching Lee *(Mechanical and Industrial Engineering)* ***Change detection performance under divided attention with dynamic driving scenarios***

◊ This research examined the effects of in-vehicle tasks on drivers' visual attention. Degraded visual attention may contribute to looked-but-failed-to-see crashes associated with the cognitive demands performing non-driving tasks, such as cell phone conversations. The experiment was conducted in a fixed-based driving simulator, with a dynamic change blindness paradigm, which simulated glancing away from the roadway by periodically blanking the driver's view for one second. Participants were then asked to detect location and appearance changes of other vehicles. Cognitive demand was manipulated with messages that participants needed to listen and respond to. Participants were less sensitive to vehicle changes when the screen was blanking, suggesting that visual attention was impaired because of the disruption of the continuous information acquisition. The cognitive demand further undermined drivers' ability to detect changes. These results show that cognitive demand and glancing away from the roadway both contribute to looked-but-failed-to-see crashes.

Matthew McCullough *(Biomedical Engineering)* ***The Characterization of Current Wrist Prosthetic Devices Using Finite Element Analysis***

◊ Research into possible improvements to current joint replacements is a growing field. In order to improve upon implant performance, research into the behavior of current

designs of total wrist arthroplasty devices was undertaken. A finite element analysis of three prostheses, the Universal Total Wrist (UTW), the Universal 2 Total Wrist (Uni2), and a Biax-like device was performed. Each model incorporated springs and rigid beams to represent the effect of tendon forces. Contact areas and ranges of motion were analyzed from each model during flexion, extension, radial and ulnar deviation. Results showed that the geometry of the implant as well as the interaction of the tendons have significant effects on implant behavior. Understanding and accounting for such effects will assist in the performance of future total wrist prosthetic devices.

Mark Olszewski *(Biomedical Engineering)* ***Quantitative Analysis of Coronary Multidetector Computed Tomography (MDCT) Images: Inter-Expert Variability and the Design of an Automated System***

◊ With the recent, rapid development of multidetector computed tomography (MDCT), excitement has built around the possibility of noninvasively imaging the coronary arteries. While the development of hardware and reconstruction technologies have advanced significantly, current image analysis techniques are dominated by manual interpretation. This study focuses on the variability associated with these manual methods and on the design of an automated analysis system. In the study of interobserver variability, six independent experts manually traced the luminal border in 60 randomly selected vascular cross sections. The mean unsigned difference for all observer pairs was 0.38 +/- 0.26 mm, with an average maximum difference of 1.32 mm. The resulting border positioning error for the automated system was 0.17 +/- 0.12 mm, thus showing that the automated system had a resulting performance that was closer to the independent standard than any two expert observers were to each other.

Seng Keat Ooi *(Civil and Environmental Engineering)* ***2-D Large Eddy Simulation of Lock-Exchange Gravity Current Flows***

◊ Lock-exchange gravity currents produced by instantaneous release of a heavy fluid are investigated using 2-D LES. The model is first validated using the 2D DNS results of Hartel et al. for the classical lock-exchange flow in an infinite channel with no-slip walls. Then the code is applied to study quantitative and qualitative aspects of the evolution of lock-release flows where the heavier (lock) fluid is initially situated in between a vertical end wall and the lock barrier. Three different length over depth aspect ratios of initial lock fluid are considered corresponding to the cases studied experimentally by Hacker et al. It is found that 2D LES is able to capture most of the physics observed in experiments, while allowing for the investigation of the flow evolution and structure during the transition between flow phases. Our simulations also show that the results during the similarity phase are consistent with the theory.

Helen Schroeder *(Mathematics)* ***(K)not Mathematics: Colored Chalk and Some Rope***

◊ (K)not Mathematics explores the mathematical science of Knot Theory. A hot topic, as human (and other) DNA knots itself. We will look at an actual example of this. We will

also look at standard knot tables. We will tie our own knots (with rope), and see if we can tell if two knots are the same or different using various techniques. Audiences in the past have had the most fun with some techniques that involve coloring knots. I will present some theorems about coloring, some corollaries, and some examples. This material is serious mathematics, hence the pun in our title, but is also accessible to anyone with any degree of math experience or math phobia.

S. Brookhart Shields *(Chemistry)* ***De Novo Design of Metallopeptides: Investigation of the Prion Protien Octarepeat Copper-Binding Motif***

◊ A chimeric Cu-binding peptide has been designed on the basis of a turn substitution of the prion (PrP) octarepeat Cu-binding site into the engrailed homeodomain helix-turn-helix motif (HTH). This system is a model for the investigation of a single PrP Cu-binding site in a defined protein context. The 28-mer Cu-HTH peptide P7 spectroscopically mimics the PrP octarepeat (P7 = TERRRQQLSHGGGWGEAQIKIWFQNKRA). The Cu(II)-binding affinity of P7 was determined by ESI-MS and tryptophan fluorescence titrations to be Kd = 2.5 ± 0.7 M at pH = 7.0. The quenching of fluorescence of the Trp within the binding loop (underlined above) is pH dependent and highly specific for Cu(II). No Trp quenching was observed in the presence of divalent Zn, Mn, Co, Ni, or Ca ions, and ESI-MS titrations confirmed that these divalent ions do not appreciably bind to P7. The EPR spectrum of Cu(II)-P7 shows that the Cu environment is axial and consistent with 6-coordinate N3O(H2O)2 or N4(H2O)2 coordination (A = 172 ? 10-4 cm-1; g = 2.27), very similar to that of the PrP octarepeat itself. Also like PrP, circular dichroism studies show that apo P7 is predominantly disordered in solution, and the structure is slightly enhanced by Cu binding. These data show the Cu-PrP HTH peptide reproduces the Cu-binding behavior of a single PrP octarepeat in a new context.

Alessio Signorini *(Computer Science)* ***The Indexable Web is more than 11.5 billion pages***

◊ What is the current size of the Web? At the time of this writing, Google claims to index more than 8 billion pages, MSN Beta about 5 billion, Yahoo! at least 4 billion and Ask/Teoma more than 2 billion. Estimating the size of the Web is quite difficult, due to its dynamic nature. In 1997, Bharat and Broder estimated the size of Web indexed by Hotbot, Altavista, Excite and Infoseek (the largest search engines at that time) at 200 million pages. Furthermore, in 1998, Lawrence and Giles gave a lower bound 800 million pages. These estimates have now become obsolete. In this short paper, we revise and update the estimated size of the Indexable Web to at least 11.5 billion pages as at the end of January 2005. We also estimate the relative size and overlap of the largest Web search engines. We adopted the methodology proposed by Bharat and Broder, but extended the number of queries from 35,000 in English, to more than 438,141 in 75 different languages.

Ioulia Skvortsova *(Chemistry)* ***Tissue Autofluorescence Spectra Simulation for the Purpose of Cancer Diagnosis***

◊ Fluorescence as an optical property of tissue reveals valuable information regarding the tissue pathology and composition. On the basis of this fact, laser induced autofluorescence is applied in tissue classification for the purpose of cancer diagnosis. In previous studies of autofluorescence spectra statistical boundaries for the detection of the disease state were established, but due to the limited sample populations investigated these boundaries are quite broad. In this study a diverse range of fluorescence spectra of tissues in different clinical conditions, including normal, hyperplastic, adenomatous, and cancerous, were constructed. Fluorescence spectra were analyzed with well established and novel methods such as Differential Normalized Fluorescence Intensity, 382 and 464 Wavelength Intensity Spread, and Covariance Mapping to establish the composition boundaries for cancer diagnosis. The use of phantoms for this purpose allows overcoming sample-to-sample and patient-to-patient variations. The establishment of the diagnostic boundaries has a vital importance in early cancer diagnosis and in the treatment of patients.

Daniel Snyder *(Geoscience)* ***Three Hundred Thirty Million Years BC (Before Corn): Iowa and the Conquest of the Land***

◊ Fossils from a 330-million-year-old ecosystem have been found in Keokuk County, Iowa. Recent research on these ancient organisms has demonstrated that the early land animals, fishes and other organisms they lived with are strikingly similar to those found around the world at that time. Is this convergent evolution or evidence of a rapid dispersal across the ancient world? This talk will focus on the science of these animals, their ancient environment and Iowa's role in the spread of life on land.

Tony Sokolov *(Chemistry)* ***Infinite 1-D Supramolecular Ladder-like Architectures via Co-Crystals***

◊ Control of organization of molecules in organic solids is a topic of fundamental importance for the design of supramolecular materials. In this context, methods to dictate the organization of functional molecules in multidimensional arrays are emerging as an important area. 1-D arrays have recently been used in the formation of discotic crystals with interesting electronic and optical properties. While such arrays have been studied extensively in the context of self-complimentary hydrogen bonding, there have been no known studies involving isolated 1-D frameworks using co-crystals. In this presentation, we demonstrate the ability of 3-aminophenol (3AP) to function as a co-crystallization agent to direct the formation of infinite 1-D ladder-like assemblies. This approach has been extended to a series of three unsaturated homologues having the 4-pyridyl functionality; namely, 4,4 -dipyridyl(dpy, 1), trans-1,2-bis-(4-pyridyl)acetylene(bpa, 2), and trans-1,2-bis-(4-pyridyl)ethylene(bpe, 3). X-ray crystal structure analyses of the co-crystals involving 1, 2, and 3 confirms the 1-D ladder-like structures.

Gabriele Villarini *(Civil and Environmental Engineering)* ***Effects of observational uncertainties on the estimated multifractal properties in radar rainfall fields***

◊ Multifractal analysis of spatial rainfall has become a standard tool to study its physical nature. Almost all of the related studies are based on the radar rainfall (RR) fields. However, very little is known about the effects of the uncertainties in RR on the estimation of the scaling function. Among the basic systematic factors that could affect the results of scaling analyses are the selection of the Z-R relationship and the reflectivity threshold, and the dependence on the range from the radar. The impact of the random errors in RR products needs to be investigated as well. In this study we examine the impacts of these systematic and random errors on the inferred scaling properties of rainfall. Our approach is to express the RR fields as a product of the true rainfall and the error process. This study indicates that the sensitivity of the results on the RR errors is high and might even dominate the results of the scaling analyses.

Jessica Woodworth *(Biomedical Engineering)* ***Impact of restricted PIP joints on MCP joint motion in the human hand***

◊ Loss of motion at the metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints due to trauma or degenerative processes impairs hand function. This study aimed to determine the affect of restricted PIP motion on the range of motion at the MCP joint while performing manual tasks. Fifteen normal subjects performed fifteen activities of daily living under two conditions: 1) unrestricted PIP and MCP motion and 2) fully restricted PIP motion of each finger (excluding the thumb) with unrestricted MCP motion. An opto-electric motion tracking system recorded movement of the fingers. Ranges of flexion, extension, and abduction at all four MCP joints were compared between the two conditions. When the PIPs were splinted, compensatory joint motions were small, while tasks that used large arcs of PIP motion showed increased MCP flexion.

Ye Xu *(Computer Science)* ***Computer-aided diagnosis of emphysema on MDCT images using volumetric features***

◊ 2-D texture features have been used in discriminating differences of diseases in computer-aided diagnosis. With the evolution of multidetector-row CT scanners (MDCT), image data sets with near isotropic voxels are acquired. Thus, we seek to use volumetric features to discriminate subtle differences in emphysema-like image regions. MDCT was performed on 34 human volunteers: 26 smokers and 8 non-smokers. We identified five patterns of 1850 volumes of interest (VOI) from MDCT images: severe emphysema; mild emphysema; normal from COPD subjects; normal from non-smokers and normal from smokers. We volumetrically detected and excluded the airway and vessel regions; calculated 24 volumetric features for each VOI; and used Bayesian rules for discrimination. Leave-one-out method was used for testing. Sensitivity, Specificity and Accuracy were calculated and compared for volumetric features and 2-D features.

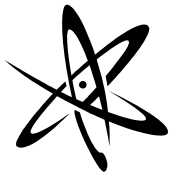
Volumetric features are significantly more sensitive and specific than 2-D features in discriminating between small differences in smoking related lung pathology.

Xingdong Zhang *(Geography)* ***Using a Genetic Algorithm to Generate Alternatives for Multiobjective Corridor Location Problems***

◊ Determining the location of optimal routes for a transportation corridor across a landscape is challenging because the process often involves multiple stakeholders with different interests and emphases. Existing corridor location techniques often search for a single global optimal solution by collapsing multiple objectives into a single objective function using a weighting mechanism. In multiobjective problems with competing objectives, however, optimality means different things to different people and trade-offs need to be investigated in alternative solution generation. In this paper, I present a multiobjective genetic algorithm based method (MOGADOR) for corridor location problems. The new method produces a full range of optimal and near optimal corridor alternatives to help decision makers understand trade-offs among conflicting objectives and evaluate imprecisely represented characteristics of solutions in ill-structured corridor location problems. The results from experiments demonstrate that MOGADOR outperforms the conventional shortest-path algorithm based methods in both computational complexity and the quality of alternatives.

Yongli Zhao *(Mechanical Engineering)* ***Dynamics of Driven Liquid Films on Heterogeneous Surfaces***

◊ A computational study is reported of the instability and growth of fingers for liquid films driven over heterogeneous surfaces. Computations are performed using a variation of the precursor-film model, in which a disjoining pressure term is used to introduce variation in static contact angle, which in turn models surface heterogeneity. The formulation is shown to yield results consistent with the Tanner-Hoffman-Voinov dynamic contact angle formula for sufficiently small values of the precursor film thickness. A modification of the disjoining pressure coefficient is introduced which yields correct variation of dynamic contact angle for finite values of the precursor film thickness. The fingering instability is examined both for cases with ordered strips of different static contact angle and for cases with random variation in static contact angle. Surface heterogeneity is characterized by strip width and amplitude of static contact angle variation for the case with strips and by correlation length and variance of the static contact angle variation from its mean value for the random distribution case.



Thank you!

The Graduate College

We are grateful to the Graduate College for funding the James F. Jakobsen Graduate Forum student awards and assisting with other expenses. We would also like to thank Deans John Keller, Dale Wurster, and Sandra Barkan for their meaningful advice and support. In addition, many thanks are due to Graduate College staff particularly Kathy Klein and Caroline Mast for their excellent technical assistance in coordinating the administration and publicity for this event.

Faculty Volunteers

Thank you to the following faculty members who have volunteered their time to serve as judges, carefully scoring the student submissions for the Forum.

Fine and Performing Arts Division: Monica Correia, Kenneth Tse and Vershawn Ashanti Young
Social Sciences and Education Division: David Bennett, David Bills, Michael Chibnik, Erika Lawrence, Gerhard Loewenberg and David Redlawsk
Humanities Division: Laird Addis, Daniel Gross, Bridget Harris Tsemo, Joni Kinsey, Philip Lutgendorf, Carol Severino, Timothy Dickey, Lawrence Fritts and Jeffrey Agrell
Biological and Life Sciences Division: Nukhet Aykin-Burns, Robert Cornell, Rebecca Oberley, Tara Smith, Steve Varga, Christine Weydert, Gerald Gebhart and Shawn Flanagan
Mathematical and Physical Sciences and Engineering Division: Linda Boyle, Victor Camillo, Edwin Dove, Leslie Dennis, Laura Frey Law and Andrew Kusiak

Student Volunteers

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Administration

Many thanks to the University of Iowa Business Office, the Office of Student Activities, and the Iowa Memorial Union Administration for facilitating the many details that are required in coordinating an event like the Forum.