

***ANNUAL RESEARCH SYMPOSIUM***

***April 5, 2012***

***Texas A&M University-Commerce***



**Sponsored by**

*The Office of the Provost/Vice President for Academic Affairs  
The Office of the Dean, College of Business & Entrepreneurship  
The Office of the Dean, College of Education & Human Services  
The Office of the Dean, College of Humanities, Social Sciences & Arts  
The Office of the Dean, College of Science, Engineering & Agriculture*

**Organizing Committee**

**Anil Chourasia**

(Physics & Astronomy, [Anil\\_Chourasia@tamu-commerce.edu](mailto:Anil_Chourasia@tamu-commerce.edu), Extension: 5491)

**Jim Heitholt**

(Agricultural Sciences, [Jim\\_Heitholt@tamu-commerce.edu](mailto:Jim_Heitholt@tamu-commerce.edu), Extension: 5351 )



## **PROGRAM**

Session S1 (Science Building, S-127)	1:00 PM -- 2:36 PM
Session S2 (Science Building, S-135)	1:00 PM -- 2:36 PM
BREAK	2:36 PM -- 3:15 PM
Session S3 (Science Building, S-127)	3:15 PM -- 5:03 PM
Session S4 (Science Building, S-135)	3:15 PM -- 5:03 PM
Poster Presentations (Foyer of Science Building)	1:00 PM -- 5:00 PM
Keynote Talk and Presentation of Awards (SRSC 231, Pride)	6:00 PM -- 8:00 PM



## SESSION S1

**Room:** Science Building, S-127

**Chair:** Dr. Jeff Kopachena  
*Biological and Environmental Sciences*

- 1:00 PM S1.01 **To Make Up an Excuse or Not?: An Examination of Factors and Attitudes that Influence Dishonesty in an Academic Environment**  
*Anna Carmichael and Lacy E. Krueger*  
*Department of Psychology, Counseling, and Special Education*  
**Undergraduate** (College of Education & Human Services)
- 1:12 PM S1.02 **Role Theory and Foreign Policy: U.S. Involvement in the Israeli-Palestinian Peace Process**  
*Angela Shaddox*  
*Department of Political Science*  
**Graduate** (College of Humanities, Social Sciences, & Arts)
- 1:24PM S1.03 **Enemies Without, Enemies Within: Adaptive Role Behavior and the Khmer Rouge**  
*JoAnn DiGeorgio-Lutz*  
*Department of Political Science*  
**Faculty** (College of Humanities, Social Sciences, & Arts)
- 1:36 PM S1.04 **Investigating Nogo-A and its Potential Role with Masparidin in Mast Syndrome**  
*Hunter Joyce*  
*Department of Biological and Environmental Sciences*  
**Undergraduate** (College of Science, Engineering, & Agriculture)
- 1:48 PM S1.05 **Influence of Collaborative Learning on Pro-social Values and Social Presence in Online Classes**  
*Marion E Blake and Stephen Reysen*  
*Department of Psychology, Counseling, & Special Education*  
**Graduate** (College of Education & Human Services)
- 2:00 PM S1.06 **Medium and Coulomb Effects in Breakup Reactions**  
*M. Karakoc, A. Banu, C. Bertulani, and L. Trache*  
*Department of Physics & Astronomy*  
**Faculty** (College of Science, Engineering, & Agriculture)

2:12 PM S1.07 **Tunneling, Diffusion, and Dissociation of Feshbach Molecules in Optical Lattices**  
*Taylor Bailey, Carlos A. Bertulani, and Eddy Timmermans*  
*Department of Physics and Astronomy*  
**Graduate** (College of Science, Engineering, & Agriculture)

2:24 PM S1.08 **Neutron Stars Superfluid Excitations**  
*Paolo Avogadro*  
*Department of Physics & Astronomy*  
**Faculty** (College of Science, Engineering & Agriculture )

## **SESSION S2**

**Room:** Science Building, S-135

**Chair:** Dr. Jason Davis  
*Educational Leadership*

1:00 PM S2.01 **Investigation of Kif5A-Masparidin Interaction: Potential link among Hereditary Spastic Paraplegias**  
*Savannah D. Brookins and Michael Hanna*  
*Department of Biological and Environmental Sciences*  
**Undergraduate** (College of Science, Engineering, & Agriculture )

1:12 PM S2.02 **Criticism of Contrastive Rhetoric**  
*Hmoud Alotaibi and Lucy Pickering*  
*Department of Literature and Languages*  
**Graduate** (College of Humanities, Social Sciences & Arts)

1:24 PM S2.03 **Modeling Success of Federal Agencies before the U.S. Supreme Court**  
*Chad M. King*  
*Department of Political Science*  
**Faculty** (College of Humanities, Social Sciences & Arts)

1:36 PM S2.04 **Selective Hydrogenation of Acetylene in Ethylene over Au Catalysts**  
*James Wheeler, Jr. and Ben Jang*  
*Department of Chemistry*  
**Undergraduate** (College of Science, Engineering, & Agriculture)

1:48 PM S2.05 **Big Bang Nucleosynthesis**  
*John Fuqua and Bao-An Li*  
*Department of Physics & Astronomy*  
**Graduate** (College of Science, Engineering, & Agriculture)

- 2:00 PM S2.06 **Structural and Functional Analysis of Methanobactin Using Ion-Mobility Mass Spectrometry**  
*Laurence Angel*  
*Department of Chemistry*  
**Faculty** (*College of Science, Engineering, & Agriculture*)
- 2:12 PM S2.07 **Harbingers of Instability or Intervention? A Case Study of the Foreign Policy of a Multi-National Corporation**  
*Adam Haney and Timothy Houston*  
*Department of Political Science*  
**Graduate** (*College of Humanities, Social Science, & Arts*)
- 2:24 PM S2.08 **Nuclear Constraints on non-Newtonian Gravity at Femtometer Scale**  
*Jun Xu, Bao-An Li, Lie-Wen Chen, and Hao Zheng*  
*Department of Physics & Astronomy*  
**Faculty** (*College of Science, Engineering, & Agriculture*)

2:36 PM -- 3:15 PM **BREAK**

### **SESSION S3**

**Room:** Science Building, S-127

**Chair:** Dr. Laurence Angel  
*Chemistry*

- 3:15 PM S3.01 **The Stigmatization of Honors College Students**  
*Brenda Freeman and Yvonne Villanueva-Russell*  
*Department of Sociology and Criminal Justice*  
**Undergraduate** (*College of Humanities, Social Sciences & Arts*)
- 3:27 PM S3.02 **Maspardin Effects on BMP Signaling Molecules**  
*Lauren E. Bailey and Michael Hanna*  
*Department of Biological and Environmental Sciences*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- 3:39 PM S3.03 **Click Porphyrins: Hosts for Chiral and Non-Chiral Guests**  
*Stephen D. Starnes*  
*Department of Chemistry*  
**Faculty** (*College of Science, Engineering, & Agriculture*)

- 3:51 PM S3.04 **GNAS-4, an Interferon-Induced Oncogene with Adverse Impact on Breast Cancer Survival**  
*Sravan Vemuri, Steven Ingram, Danyelle Butts, Megan Miller, Casey Murphy, Ashjan Khalel, Mariam Gadelkarim, Logan Arthur & Venu Cheriya*  
*Department of Biology and Environmental Sciences*  
**Undergraduate** (College of Science, Engineering & Agriculture)
- 4:03 PM S3.05 **Anti-Semitism in Hitler Youth Literature**  
*Darina G. Davis*  
*Department of History*  
**Graduate** (College of Humanities, Social Sciences, & Arts)
- 4:15 PM S3.06 **Friend Accuracy of Ingroup Identification**  
*Tana Hall and Stephen Reysen*  
*Department of Psychology, Counseling, & Special Education*  
**Undergraduate** (College of Education & Human Services)
- 4:27 PM S3.07 **From Neutron Skins to Neutron Stars**  
*F. J. Fattoyev*  
*Department of Physics & Astronomy*  
**Faculty** (College of Science, Engineering, & Agriculture)
- 4:39 PM S3.08 **Origins and Implications for Outcomes-Based Funding in Texas Higher Education**  
*Kim Laird and Joyce A. Scott*  
*Educational Leadership*  
**Graduate** (College of Education & Human Services)
- 4:51 PM S3.09 **Possible Protein Interaction between Maspardin and ALDH18A1 in Mast Syndrome**  
*Mary Mason and Michael Hanna*  
*Department of Biological and Environmental Sciences*  
**Undergraduate** (College of Science, Engineering, & Agriculture)

#### SESSION S4

**Room:** Science Building, S-135

**Chair:** Dr. Kurtay Ogunc  
*Economics and Finance*

- 3:15 PM S4.01 **An Evaluation of the Reliability and Predictive Validity of the LSI-R on a Gendered Sample: Moving the Discussion Forward**  
*Christina Gammon and Melinda Schlager*  
*Department of Sociology and Criminal Justice*  
**Graduate** (College of Humanities, Social Sciences, & Arts)

- 3:27 PM S4.02 **The Aging US Farmer and Agricultural Policy Implications**  
*Frannie Miller*  
*Department of Economics and Finance*  
**Faculty** (*College of Business & Entrepreneurship*)
- 3:39 PM S4.03 **Consequences of Interferon Stimulated Gene(s) Dysfunction in Breast Cancer**  
*Venu Cheriyaath, Sravan Vemuri, Steven Ingram, and Melissa Kuhns*  
*Department of Biology and Environmental Sciences*  
**Faculty** (*College Science, Engineering, & Agriculture*)
- 3:51 PM S4.04 **Social Networks and Online Identities**  
*Geronimo Perez, Stephen Reysen, Robin Reid, Janarathan Gnanachandra, Shalini Reddy*  
*Department of Psychology, Counseling, & Special Education*  
**Graduate** (*College of Education & Human Services*)
- 4:03 PM S4.05 **Rosby Waves in Neutron Stars and the Spin Periods of Recycled Pulsars**  
*William Newton*  
*Department of Physics & Astronomy*  
**Faculty** (*College of Science, Engineering, & Agriculture*)
- 4:15 PM S4.06 **Moment of Inertia of the Inner Crust 'Napkin Ring'**  
*Joshua Hooker and Bao-An Li*  
*Department of Physics & Astronomy*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- 4:27 PM S4.07 **“The Public Interest Must Dominate:” Herbert Hoover and the Public Interest, Convenience and Necessity**  
*John Mark Dempsey and Eric Gruver*  
*Department of Mass Media, Communication & Theatre*  
**Faculty** (*College of Humanities, Social Sciences & Arts*)
- 4:39 PM S4.08 **Stress Management in a Business Process Outsourcing Company**  
*Azra Naveed Fnu*  
*Finance and Technology Management*  
**Graduate** (*College of Business & Entrepreneurship*)
- 4:51 PM S4.09 **Effect of Quark-Hadron-Phase-Transition in Neutron Stars on Gravitational Waves**  
*Jeffrey Campbell and Bao-An Li*  
*Department of Physics and Astronomy*  
**Graduate** (*College of Science, Engineering, & Agriculture*)

## POSTER PRESENTATIONS

Science Building Foyer (1:00 PM -- 5:00 PM)

- P1     **Phytoremediation of Arsenic Contaminated Soil by *Rudbeckia hirta* Inoculated With Mycorrhizal Fungi**  
*Beth Felix and Chip Fox*  
*Department of Biology and Environmental Sciences*  
**Undergraduate** (*College of Science, Engineering, & Agriculture*)
- P2     **Dominance and Reproductive Success in Syntopic Nesting Barn Swallows (*Hirundo rustica*) and Cave Swallows (*Petrochelidon fulva*)**  
*Ashleigh Sherrard and Jeff Kopachena*  
*Department of Biology and Environmental Sciences*  
**Undergraduate** (*College of Science, Engineering, & Agriculture*)
- P3     **Growth Optimization of *Chlamydomonas reinhardtii* for Pyrolytic Conversion**  
*Henry Patrick MacKnight, Christina Presti Blake Hart, and DongWon. Choi*  
*Department of Biology and Environmental Sciences*  
**Undergraduate** (*College of Science, Engineering, & Agriculture*)
- P4     **A Study of the Niche Structure and Habitat Utilization of Urban Dwelling Winter Birds**  
*Thomas P. Huff and Jeff Kopachena*  
*Department of Biology and Environmental Sciences*  
**Undergraduate** (*College of Science, Engineering, & Agriculture*)
- P5     **Synthesis of Chiral Porphyrins and Structural Studies of their Host:Guest Complexes**  
*Karthik Akinapelli and Stephen Starnes*  
*Department of Chemistry*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- P6     **Porphyrin Hosts for the Shape-Selective Recognition of Anion Guests**  
*Anusha Bommidi and Stephen Starnes*  
*Department of Chemistry*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- P7     **Nipecotic Acid-Porphyrin Derivatives: Chiral Anion Recognition**  
*Xiaowen Wu and Stephen Starnes*  
*Department of Chemistry*  
**Graduate** (*College of Science, Engineering, & Agriculture*)

- P8 **Self-Esteem and the Motivation to be a Global Citizen**  
*Loretta Larey*  
*Department of Psychology, Counseling and Special Education*  
**Graduate** (*College of Education & Human Services*)
- P9 **The Influence of Beliefs about Memory, Sex, and Study Time Effectiveness on Memory Performance**  
*Cristina Sifuentes and Lacy E. Krueger*  
*Department of Psychology, Counseling, and Special Education*  
**Graduate** (*College of Education & Human Services*)
- P10 **Mass Spectrometry Study of Tetraglycine Associated with Selected Metal ions: Manganese, Cobalt, Nickel, Copper and Zinc**  
*Archana Gujjari and Laurence Angel*  
*Department of Chemistry*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- P11 **Global Companies**  
*Andrea Slobodnikova, Jennifer Flanagan, Shonda Gibson, and Stephen Reysen*  
*Dean's office*  
**Graduate** (*College of Business & Entrepreneurship*)
- P12 **Global Hiring**  
*Natalia Assis, Jennifer Flanagan, Shonda Gibson, and Stephen Reysen*  
*Dean's Office*  
**Graduate** (*College of Business and Entrepreneurship*)
- P13 **Plagiarism as a Threat to Public Identity**  
*Shonda Gibson and Stephen Reysen*  
*Department of Psychology, Counseling, and Special Education*  
**Graduate** (*College of Education & Human Services*)
- P14 **Selective Hydrogenation of Acetylene over Pd on [Bmim][PF<sub>6</sub><sup>-</sup>] and [Bmim][BF<sub>4</sub><sup>-</sup>]-loaded SiO<sub>2</sub> support**  
*Kristine Jang, Juana Rivas, and Ben Jang*  
*Department of Chemistry*  
**Graduate** (*College of Science, Engineering, & Agriculture*)
- P15 **Tracking a Single Object with a Shrinking Active Contour & Modified Kalman Filter**  
*Pravinkumar Kandhare and Nikolay Metodiev Sirakov*  
*Department of Computer Science, Department of Mathematics*  
**Graduate** (*College of Science, Engineering, & Agriculture*)

- P16 **Maspardin-Rab7 Coupling and Development of Neuropathic Phenotype**  
*Anne Davenport and Michael Hanna*  
*Department of Biological and Environmental Sciences*  
**Graduate** (College of Science, Engineering, & Agriculture)
- P17 **Deal or No Deal: Delayed Discounting, Anticipated Regret, and Persistence in Gambling**  
*Erin Talley and Katie Shipman*  
*Department of Psychology, Counseling, and Special Education*  
**Graduate** (College of Education & Human Services)
- P18 **Comparative studies of Metal Ion Labeling of Unreduced and Reduced Lysozyme at Different Charge States by ESI/MS and IMMS Techniques**  
*Sruthi Konakanchi.*  
*Department of Chemistry*  
**Graduate** (College of Science, Engineering, & Agriculture)
- P19 **Habitat Association of Small Mammals on the Erwin Bottom**  
*Ryan Scauzillo and Jeff Kopachena*  
*Department of Biological and Environmental Sciences*  
**Graduate** (College of Science, Engineering, & Agriculture)
- P20 **Selective Hydrogenation of Acetylene over Pd on Ionic Liquid loaded SiO<sub>2</sub> Support**  
*Ting Zhou and Ben Jang*  
*Department of Chemistry*  
**Graduate** (College of Science, Engineering, & Agriculture)
- P21 **Discovery of a Human Heart RNA that Induces Myocardiogenesis**  
*Andrei Kochegarov, Ashley Moses, Will Lian, Michael C. Hanna and Larry F. Lemanski*  
*Department of Biological and Environmental Sciences*  
**Faculty** (College of Science, Engineering, & Agriculture)
- P22 **The Composition and Ecological Segregation of Snake Communities from the Erwin Bottom in Hunt County, Texas.**  
*Jerrod G. Tynes and Lani Lyman-Henley*  
*Department of Biological and Environmental Sciences*  
**Graduate** (College of Science, Engineering, & Agriculture)

## **Keynote Talk**

**Room:** SRSC 231 Pride

**Chair:** Debby Heitholt, BSN, RN, Student Health Services

### **Minority Organ Donation on an East Texas University Campus**

*Quynh Dang*  
*Health & Human Performance*

More than half of the national transplant waiting list is made up of multicultural populations. That's because some diseases of the kidney, heart, lung, pancreas and liver that are best treated through transplantation are found more frequently in these populations. For example, African Americans and other minorities are three times more likely to suffer from end-stage renal disease than Caucasians. Although it is possible for a candidate to match a donor from another racial or ethnic group, transplant success rates increase when organs are matched between members of the same ethnic background. Consequently, a lack of organs donated by multicultural populations can contribute to longer waiting periods for transplantation. Minority donors account for only about 25% of the available donor pool. After disseminating a campus wide survey, results included 1,200 non organ donors. Following a month long health promotion campaign, 600 signed donor cards, with 30% being minorities. The students also began to develop a program called Lion Savers, which would also incorporate blood donations, drunk driving contracts, and STD awareness.



## **ABSTRACTS**



## **To Make Up an Excuse or Not?: An Examination of Factors and Attitudes that Influence Dishonesty in an Academic Environment**

*Anna Carmichael and Lacy E. Krueger  
Department of Psychology, Counseling, and Special Education*

Academic excuse-making is a type of academic dishonesty that has the potential to occur within all academic environments. The present study examined the behavior and attitudes of undergraduate university students in relation to this phenomenon. The primary goal of the study was to investigate whether the communication medium that students have at their disposal to communicate with their instructor (email or a face-to-face meeting) and the percentage weight of the academic task in which students are trying to avoid academic responsibility, have an effect on excuse-making behaviors and attitudes. A secondary goal of the study was to investigate the relationship between undergraduate university students' attitudes towards academic dishonesty, and their readiness to create a fraudulent excuse in an academic situation.

Based on past literature, it was hypothesized that students would report with higher frequency that they would engage in academic-excuse making via email than in meetings with instructors, and that students whom have an assignment worth a larger percentage of their final grade would engage in fraudulent academic-excuse making more frequently than those whom have an assignment worth a smaller percentage. However, there was not a significant effect that supported these predictions. It was also predicted that students who indicated they would provide fraudulent academic excuses to their instructor would demonstrate a more accepting attitude towards academic dishonesty in response to a survey, suggesting that individuals did not view academic-dishonesty as being a malevolent type of behavior. Results suggested that there was a positive correlation between communicating fraudulent excuses within an academic environment to avoid academic responsibility and more accepting attitudes towards academic excuse-making.

S1.02

## **Role Theory and Foreign Policy: U.S. Involvement in the Israeli-Palestinian Peace Process**

*Angela Shaddox  
Department of Political Science Department*

This study examines the role the United States has played in the Israeli-Palestinian peace process over approximately the last twenty years. In an attempt to better comprehend this phenomenon, Stephen John Stedman (1997) developed a typology in which he identifies the occurrence of what he calls spoilers to the process of peace. Spoilers are the parties directly involved in the conflict that the peace agreement is centered on. They have competing interests, goals, and worldviews and see the compromise necessary to achieve peace as a threat to their power. According to Stedman's typology, the Israeli government and the Palestinian Authority would be the spoilers, and the U.S. would be considered a custodian in the Israeli-Palestinian peace process. Custodians are members of the international community who work with the spoilers to execute the peace agreements. Stedman believes that how the custodians choose to manage the spoiler problem will ultimately be the deciding factor in the success or failure of the peace process. The purpose of this study is to apply Stedman's typology to the Israeli-Palestinian peace process and address what success, or lack thereof, the U.S. has had in its management of the spoilers. Role theory is used to examine U.S. involvement in this peace process. This study seeks to demonstrate that while the goal of the U.S. has been to successfully embody the role of custodian, in reality, it has taken on more of the characteristics of a spoiler. As a result, it has had a negative influence and at times even retarded the progress of peace.

## **Enemies Without, Enemies Within: Adaptive Role Behavior and the Khmer Rouge**

*JoAnn DiGeorgio-Lutz*  
*Department: Political Science*

Beginning with their formation as a non-state actor in 1960 to their transition to a state actor in 1975, the Communist Party of Kampuchea, more widely known as the Khmer Rouge, acquired and exercised a diversity of foreign policy roles. During its nearly 4 year tenure as a state actor (April 1975-January 1979), the KR marked the start of “Year Zero” by totally transforming Cambodian society and implementing one role in particular that would result in the deaths of approximately two million of its people—defenders of the revolution. Because the KR regime was not built on the cult of personality, the KR leadership initially exercised this role as a mechanism to praise the faceless regime, or the Angka. By late 1977, the KR leadership began to open up by identifying its leadership and in the process expanded the defenders of the revolution role to include the hunt for internal enemies. This occurs at roughly the same time that tensions with its neighbor—the enemy without--Vietnam, increase. Differences of opinion or opposition to the party line were not considered subversive to the revolution and the party had to be purged of enemies within and without. The defenders of the revolution role now promoted revolutionary vigilance and Pol Pot’s perceptions of his enemies (both domestic and foreign) became filtered through the forced confessions of CPK cadre and other high-ranking officials. These forced confessions identified the enemies of the revolution as collaborators with the Vietnamese who were plotting to overthrow the Pol Pot regime from within. The regime now defined itself as a victim providing the leadership with a “rationale” for the murder of thousands of KR cadre. In turn, this also led to a redefinition of KR foreign policy and efforts by Pol Pot to personalize his regime in late 1978 and pragmatically work to broaden KR foreign policy support in Kampuchea’s struggle with Vietnam. This research examines several constructivist approaches to foreign policy determine if a constructivist framework can provide us with a fuller understanding of KR role behavior. Can constructivism allow us to understand how Pol Pot assigned identity and utilized the defender of the revolution role in a society in which identity was radically transformed from the traditional socio-cultural bonds of urban patronage networks, village practices, Buddhist cosmology and the family to a centrist state?

S1.04

## **Investigating Nogo-A and its Potential Role with Maspardin in Mast Syndrome**

*Hunter Joyce*

*Department of Biological and Environmental Sciences*

Hereditary spastic paraplegias (HSPs) are a family of inherited, heterogeneous neurological disorders that are defined by progressive spasticity and weakness of the lower limbs. One particular autosomal recessive form of HSP, known as Mast syndrome (SPG21), is the result of a mutation in acidic cluster protein 33 (ACP33) gene. Though the normal functions of maspardin are still unknown, it is ubiquitously expressed and hypothesized to be involved in protein sorting and trafficking in the trans-Golgi network/endosomal pathway. We will further investigate maspardin's function by studying the interaction of maspardin and a member of the reticulon family, RTN4. An isoform of RTN4 known as RTN4A (Nogo-A) is expressed in oligodendrocytes and localizes to the endoplasmic reticulum. Numerous studies have shown that Nogo-A acts to repress neuronal regeneration in the central nervous system, implying that Nogo-A may be a contributing factor in the pathology of certain HSPs. In Silico analysis has already hypothesized Nogo-A to be a protein interaction partner to maspardin. This study of a potential interaction between maspardin and Nogo-A will involve numerous techniques. I have successfully cloned Nogo-A, confirming correct orientation through restriction digest. My next step will be to successfully transfect Nogo-A into either Cos7 or HeLa cells using Western Blot analysis as a means of confirming success.

## **Influence of Collaborative Learning on Pro-social Values and Social Presence in Online Classes**

*Marion E Blake and Stephen Reysen*

*Department: Psychology, Counseling, & Special Education*

The present study ( $N = 80$ ) tested the effectiveness of a collaborative learning activity, the jigsaw classroom (Aronson, 2000) in online classes. Jigsaw classroom has been used with face-to-face classes to successfully teach academic content and positively influence the social experience of college students (Dudley, Johnson, & Johnson, 1997; Walker, 1996). Online classes of students were randomly assigned to work in small groups using chat sessions to learn and teach other students material with either global or neutral content, or to a control group (no activity). After participating in the jigsaw activity students completed a questionnaire regarding pro-social attitudes and social presence. Results indicate significant differences between groups with differing content (i.e., global vs. control) on subsequent endorsement of pro-social values (e.g., interconnectedness, social justice, community service). Furthermore, perceived social presence of the online class was significantly higher for both global and neutral groups compared to the control group.

## **Medium and Coulomb Effects in Breakup Reactions**

*M. Karakoc<sup>1,2</sup>, A. Banu<sup>3</sup>, C. Bertulani<sup>1</sup> and L. Trache<sup>4</sup>*  
*Texas A&M University-Commerce<sup>1</sup>*  
*Akdeniz University<sup>2</sup>*  
*James Madison University<sup>3</sup>*  
*Texas A&M University<sup>4</sup>*

We study the effect of final state interactions and of medium modifications of the nucleon-nucleon cross sections on the nucleon knockout reactions. We compare the results obtained with and without these effects to check their relevance in the extraction of spectroscopic factors. Our results are compared to published experimental data for total nucleon-removal cross sections and for momentum distribution of fragments. It is shown that final state interactions (mainly Coulomb distortion) and medium effects leads to some relevant modifications of quantities extracted.

**Tunneling, Diffusion, and Dissociation of Feshbach Molecules in Optical Lattices**

*Taylor Bailey<sup>1</sup>, Carlos A. Bertulani<sup>1</sup> and Eddy Timmermans<sup>2</sup>*

*<sup>1</sup>Department of Physics and Astronomy, (College of Science, Engineering, & Agriculture)*

*<sup>2</sup>CNLS, Los Alamos National Laboratory, Mail Stop: B258, Los Alamos, NM 87545*

We show that tunneling and diffusion of cold Rydberg molecules in optical lattices lead to some-what unexpected effects. One of these effects is the resilience of the molecules to dissociate as their binding energy decreases. We also quantify the dynamics of molecular diffusion and dissociation of molecules in a 1D harmonic optical lattice potential and compare them to analytical models. It is found that after an initial transient state, the wave packet for dissociating molecules can be described by a power diffusion pattern of the type  $\sigma(t) \propto t^{1/2}$ , where  $\sigma$  is the dispersion of the packet. Surprisingly, we could not obtain such a simple power law fit for the dispersion of dissociated atoms.

S1.08

## **Neutron Stars Superfluid Excitations**

*Paolo Avogadro*  
*Department of Physics & Astronomy*

Neutron stars are one of the possible final stages of a star. They are compact objects where matter reaches very extreme conditions. In particular the density of a neutron star is comparable to that of an atomic nucleus and for this reason the theoretical tools used to investigate nuclear properties can be applied to describe the internal structure of neutron stars. In this talk the neutron superfluid present in the inner crust will be addressed, and we will focus on the properties of neutron vortices.

## **Investigation of Kif5A-Masparadin Interaction: Potential Link among Hereditary Spastic Paraplegias**

*Savannah D. Brookins and Michael Hanna  
Department of Biological and Environmental Sciences*

The hereditary spastic paraplegias (HSPs) are a group of neurological disorders characterized by progressive lower-limb spasticity and weakness. One autosomal recessive form of HSP, Mast syndrome (SPG21; MIM 248900), is caused by mutation in the SPG21 gene, which encodes a protein, masparadin, of unknown function. Studies suggest that normal functions of masparadin include protein sorting in the late endosomal/lysosomal pathway and mediating changes in intracellular protein targeting. We will investigate this function by studying the interaction of masparadin and a family of kinesin-1 motor proteins. The kinesin-1 proteins, Kif5A, B, and C, are microtubule motors involved in axonal transport and the transport of membranous organelles within the late endocytic pathway. Another form of HSP, SPG10, is caused by mutations in Kif5A. We hypothesize that a Kif5 isoform interacts with masparadin and disruption of this interaction contributes to neuropathogenesis. Immunoprecipitation of masparadin with identification of coprecipitating proteins by mass spectrometry revealed kinesin-1 as an interacting protein. Further investigation revealed an interaction specific for the Kif5A isoform. This interaction was confirmed using overexpressed proteins as well as endogenous pull down experiments. Further studies of the role of the masparadin-Kif5A interaction in neuronal cells may clarify the cellular pathogenesis of Mast syndrome.

### **Criticism of Contrastive Rhetoric**

*Hmoud Alotaibi and Lucy Pickering  
Department of Literature and Languages*

Contrastive rhetoric was initiated by Kaplan (1966) when he analyzed 600 essays written by native speakers of English and ESL students. He discovered that students from different cultures constructed different rhetorical patterns to build their paragraphs. For example, he showed that writers in English followed the linear pattern while students from Asian countries wrote in circles. This controversial work has attracted a plethora of researchers' attention who conducted a number of studies to test Kaplan's claims. This present study focuses on the criticism on this scholarship. It reviews Spack's (1997) argument when she showed disinterest in labeling students by their L1 backgrounds. In addition, this study examines Kubota's and Lehner's (2004) arguments who showed that the concept of culture needs to be understood as changing and dynamic instead of static and fixed one and thus they argued that examining culture in writing is problematic. This essay also highlights the developments of contrastive rhetoric and explains its new version. The different methodologies that researchers have used to measure the writers' rhetorical patterns are also considered in this paper. It concludes with some pedagogical implications.

## **Modeling Success of Federal Agencies before the U.S. Supreme Court**

*Chad M. King*  
*Department of Political Science*

One of the more consistent findings of judicial politics research is the extremely high level of success the United States government has enjoyed at the bar of the Supreme Court. This success greatly exceeds that of not only private individuals and organizations, but businesses and state and local government as well. A subset of this scholarship has focused on a specific type of cases involving the federal government, namely, those involving federal bureaucracies and examined what factors affect these decisions. (Tanenhaus, 1960; Shapiro, 1968; Cannon and Giles, 1972; Rodgers and Bullock, 1972; Giles and Gatlin, 1980; Crowley, 1986; Sheehan, 1990; Sheehan, 1992; Horwitz, 1994). Relying upon both qualitative analysis of Court doctrine and aggregate measures of Supreme Court support, researchers have sought to explain what drives bureaucratic success. A majority of these studies, however, have failed to systematically examine the determinants of bureaucratic success at the individual case level. And those that do, control for very few independent variables.

In this paper, I increase our understanding of this important subset of the Court's docket by using a more intricate and comprehensive theoretical model. Expanding upon earlier versions on my own work, (King, 2000, 2001) I make two departures from the extant research in this area. First, I develop a theoretical model that focuses on three sets of explanatory factors: judicial preferences, agency characteristics and administrative law, and variables that affect agency implementation of judicial decisions. The explanatory power of judicial preferences in Supreme Court decision making is well documented, thus any attempt to model decision making in bureaucratic cases should clearly include this factor. The same cannot be said, however, for administrative law and the determinants of bureaucratic compliance. Because of the complexity of administrative law, it is possible that certain doctrines and case characteristics could affect how the Court decides a given case. In addition, factors related to bureaucratic compliance may also matter in advance. If particular agencies are able or tend to not comply with Supreme Court decisions, the Court may be less apt to vote against them. It may be more strategic for justices to vote for an agency but limit the decision in such a way to constrain other or future agencies.

Second, I specify and estimate a theoretical model that incorporates not only the Court's decisions on the merits in agency cases but also the certiorari decisions in agency cases. Because scholars have consistently shown that cert is a non-random process, (for instance see Caldeira, Wright and Zorn 1999; Cameron, Segal and Songer, 2000), it is possible that the decisions made in the stage impact which factors are significant in the decision stage might as the Court wades through cert applications and chooses its caseload. And, given the likely statistical relationship between these two stages of decision making as a result of this theoretical connection, modeling them procedure more optimal, unbiased statistical results and theoretical conclusions. Factors that are found not to affect decision making on the merits may still play a role in deciding agency cases because they affect what cases the Court wants to here. By modeling both stages, I provide a more thorough examination of Supreme Court decisions in these cases than previous efforts.

To gauge what affects bureaucratic success in the Supreme Court, I estimate a decision-making model based on the three categories of variables just discussed. As my dependent

variable, I use whether a justice votes for or against a bureaucracy, regardless of whether he is the respondent or appellant. Using the United States Supreme Court Judicial Database and Lexis-Nexis Academic Universe, I identified all cases involving federal bureaucracies as either the petitioner or respondent, beginning with the 1959 Term and ending with the 1972 Term. For my estimation, I rely on their weighted-data collection method, which requires the researchers to collect all the “1’s”, which are the cases where cert is granted in my model, and to collect at least as many “0’s”, cert denials. Weights are then calculated based on the proportion of actual and collectable “0’s” and “1’s” in the sample and the population. (See King and Zeng 2000 a formal explanation) During the 1959-1972 period I was able to collect data on all variables for 200 first-stage “1” observations and 236 first stage “0’s”. I then calculated the appropriate weights and estimated a Heckman probit model using the weighted observations.

## Selective Hydrogenation of Acetylene in Ethylene over Au Catalysts

*James Wheeler, Jr. and Ben Jang*  
*Department of Chemistry*

This study investigates the effectiveness of gold catalysts for selective hydrogenation of acetylene in the presence of large excess of ethylene. 5% & 1% gold catalysts were chosen for examination under varying parameters. One of the Au catalysts was prepared by deposition-precipitation method on TiO<sub>2</sub> support and the other was prepared by photodeposition. Before reaction, catalysts were reduced in hydrogen for 1 hour at 250°C or 400°C. The reaction were carried out at a space velocity of 60,000 cc/g/hr with 20:1, 10:1, 5:1, and 2:1 of hydrogen to acetylene molar ratios at temperatures from 50°C to 400°C. A 1% catalyst reduced for one hour at 250°C, and a 5:1 ratio of hydrogen to acetylene produces the highest yield of ethylene, ~87% at a temperature of 250°C. The catalyst has been found to be stable for up to twelve hours under these conditions. Further investigation will focus on the stability of Au catalysts under more severe conditions, such as lower hydrogen to acetylene ratios and higher reduction temperatures. Results and discussion on catalyst characterization, including Au loading, surface area, pore size distribution and coking, will be reported.

## **Big Bang Nucleosynthesis**

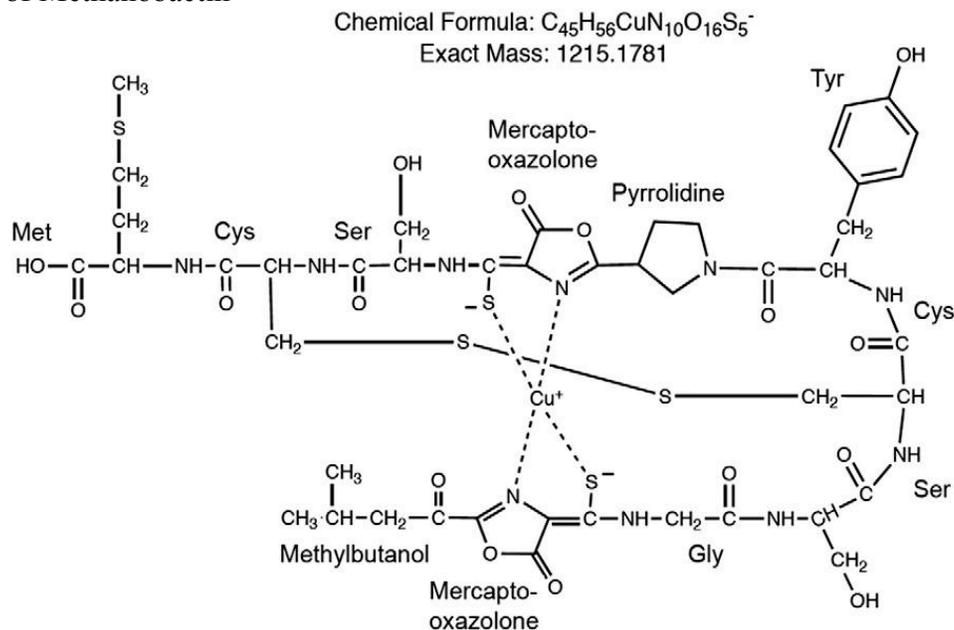
*John Fuqua and Bao-An Li  
Department of Physics & Astronomy*

Big Bang Nucleosynthesis (BBN) is one of the most important evidences of the validity of the Standard Model in Cosmology. During the Big Bang the Universe evolved very rapidly and only the lightest nuclides (e.g., D,  $^3\text{He}$ ,  $^4\text{He}$ , and  $^7\text{Li}$ ) could be synthesized. The abundances of these nuclides are probes of the conditions of the Universe during the very early stages of its evolution. Sensitivity to the several physics inputs in the BBN have been investigated thoroughly in the past. An important recent development is the need to account for the effect of re-estimated reaction rates on the BBN. Here we will examine the effects of new methods for obtaining nuclear reactions used as input in BBN evolution codes.

## Structural and Functional Analysis of Methanobactin Using Ion-Mobility Mass Spectrometry

Laurence Angel  
Department of Chemistry

### Structure of Methanobactin



Methanobactin (mb) is a small molecular mass (~1,200 Da), highly modified peptide secreted by a species of methanotrophic bacteria (*Methylosinus trichosporium*) in response to copper deficiencies. Methanobactin is involved with copper acquisition for the particulate methane mono-oxygenase enzyme which is responsible for catalyzing the oxidation of methane to methanol. Upon binding, mb reduces  $Cu(II)$  to  $Cu(I)$  autonomously. The intriguing features of mb seem all related to one big question; “what is the molecular mechanism of metal binding and self-sustained redox-activity of mb?” In our research we adopt novel instrumental methods including state-of-the-art quadrupole/ion mobility/time-of-flight mass spectrometry and spectrophotometry to investigate the binding modes and redox kinetics of copper ion – mb complexes.

## **Harbingers of Instability or Intervention? A Case Study of the Foreign Policy of a Multi-National Corporation**

*Adam Haney and Timothy Houston*  
*Department of Political Science*

In the literature on foreign policy there is a gap that does not account for the actions of non-state actors, in particular, multi-national corporations (MNCs). In addition to this gap, the literature on role theory and foreign policy also fails to account for the foreign policy behavior of MNCs as a non-state actor exercising multiple roles in the international system beyond a purely “economic” function. This paper applies a role theory model to a longitudinal case study of a MNC to better understand the foreign policy behavior of a non-state actor and the source of its foreign policy behavior politically and economically. Non-state actors have their own foreign policy agendas and a repertoire of roles they can exercise somewhat analogous to the roles exercised by nation-states. This paper will tentatively explore the various roles that an MNC can utilize within the context of attaining their foreign policy objectives. This paper longitudinally examines the foreign policy of International Telegraph & Telephone (ITT) and isolates the individual level of analysis as one source of this MNCs foreign policy behavior. In particular, this paper will focus on explaining role choice on the part of the Chief Executive Officer (CEO) Harold Sydney Geneen and the roles he exercised during ITT’s involvement in Chile from 1960 to 1980. It will look at multiple role determinants (independent variables) paying attention to regional dynamics in the run up to the administration of Chilean President, Salvador Allende, the impact of Allende himself, and the external factors from actors such as the United States. Lastly, it will examine ITT’s foreign policy agenda during the post-Allende dictatorship of General Augusto Pinochet.

### **Nuclear Constraints on non-Newtonian Gravity at Femtometer Scale**

Jun Xu,<sup>1</sup> Bao-An Li,<sup>1,2</sup> Lie-Wen Chen,<sup>3,4</sup> and Hao Zheng<sup>3</sup>

<sup>1</sup>*Department of Physics and Astronomy, Texas A&M University-Commerce, Commerce, Texas  
75429-3011, USA*

<sup>2</sup>*School of Science, Xi'an Jiao Tong University, Xi'an 710049, P.R. China*

<sup>3</sup>*Department of Physics, Shanghai Jiao Tong University, Shanghai 200240, China*

<sup>4</sup>*Center of Theoretical Nuclear Physics, National Laboratory of Heavy Ion Accelerator, Lanzhou  
730000, China*

Effects of the non-Newtonian gravity on properties of finite nuclei are studied by consistently incorporating both the direct and exchange contribution of the Yukawa potential in the Hartree-Fock approach using a well-tested Skyrme force for the strong interaction. It is shown for the first time that the strength of the Yukawa term in the non-Newtonian gravity is limited to  $\log(j @ j) < 1.75 = [ (fm)] 0.54 + 33.6$  within the length scale of  $r = 1 ; 10$  fm in order for the calculated properties of finite nuclei not to be in conflict with accurate experimental data available.

### **The Stigmatization of Honors College Students**

*Brenda Freeman and Yvonne Villanueva-Russell*  
*Department of Sociology & Criminal Justice*

Honors colleges are generally seen as a beneficial addition to a university setting by providing an environment to aid higher-achieving students. Among the concerns of faculty and researchers is the possibility of elitism and the occasional mention of stigma relating to the Honors College experience. Stigma theory seems contradictory to the premise of an Honors College as stigma is precipitated upon the idea of abnormalities which negatively provoke the norms of society and Honors Colleges are the result of students who excel beyond the expectations of society. Upon a further examination of stigma theory and Honors Colleges, significant connections can be made. These connections evince the perception by Honors students that they are stigmatized by their non-Honors peers on a university campus, linking together two aspects of society – the stigmatized and the high-achieving – that superficially seem opposite of the other.

## **Masparadin Effects on BMP Signaling Molecules**

*Lauren E. Bailey and Michael Hanna  
Department of Biological and Environmental Sciences*

The hereditary spastic paraplegias are a group of upper motor neuron disorders characterized by continuous degradation of motor neurons trailing through the motor cortex, down the spinal cord, and out to the periphery. Mast syndrome (SPG21) is an autosomal-recessive complicated form of HSP that originates from a mutation of the ACP33/masparadin gene.

Bone Morphogenetic Proteins (BMPs) are a group of multifunctional growth factors that, along with forming bone and cartilage, influence axonal synaptic growth and function. Upon activation by BMP ligand, type II BMP receptors phosphorylate type I receptors. This activates intracellular signaling molecules Smad 1, 5 and 8. These bind Smad 4 and the Smad complex enters the cell nucleus to drive gene transcription.

Previous studies have shown multiple HSP-associated proteins to be inhibitors of BMP signaling. Therefore, we propose that masparadin is an additional BMP inhibitor. Veritably, masparadin-depleted neurons have exhibited increased axonal branching.

Preliminary results have demonstrated increases in BMP signaling in knockout MEFs over a series of five timepoints as compared to wildtype. BMP4 ligand stimulation will be done over the same series of timepoints for a more accurate comparison. Phosphorylated Smad 1/5 levels will be examined via western blot and compared to total Smad levels after stimulation with BMP4 ligand.

GFP-masparadin will be overexpressed in wildtype MEFs and compared against knockout MEFs to determine whether overexpression of masparadin changes BMP signaling levels and restore knockout levels to those found in wildtype. GFP-masparadin will also be overexpressed in Cos-7 cells and compared to control. Comparable experiments will be done using primary neuron cultures from wildtype and knockout mice.

S3.03

### **Click Porphyrins: Hosts for Chiral and Non-Chiral Guests**

*Stephen D. Starnes*  
*Department of Chemistry*

This seminar will present our research efforts in porphyrin-related host-guest chemistry, which centers on the development of synthetic receptors for the recognition of anion and amine guests. The synthesis of 15 non-chiral porphyrin hosts and over 25 chiral porphyrin hosts and their recognition properties with non-chiral and chiral guests that vary in geometry and functionality will be described. For the creation of the chiral hosts, a porphyrin isocyanate was reacted with a variety of commercially available chiral amines and chiral amino alcohols; thus, the chiral hosts presented are practically ‘off the shelf’ receptors that are available in diversity in high yield with minimal synthetic effort. A unique aspect of the hosts is their introverted functionality – guest recognition sites protrude into the interior of the host cavity where they work in tune with the porphyrin metal center for cooperative guest binding. Several hosts display a conformationally-induced organization upon binding to guests.

**GNAS-4, an Interferon-Induced Oncogene with Adverse Impact on Breast Cancer Survival**

*Sravan Vemuri, Steven Ingram, Danyelle Butts, Megan Miller, Casey Murphy, Ashjan Khaleel, Mariam Gadelkarim, Logan Arthur and Venu Cheriya*  
*Department of Biological and Environmental Sciences*

Traditionally innate immune signaling such as interferons (IFNs) have been associated with tumor suppression. In contrast to many interferon stimulated genes (ISGs) as the mediators of tumor suppressing effect of IFNs, recently we demonstrated the direct role of an ISG called GIP3 in breast cancer development and progression. Therefore, we hypothesized that aberrantly expressed ISGs with oncogenic activity may result in poor prognosis in cancer patients. To identify such ISGs, gene expression data from 22 breast cancer patients and 10 normal subjects were analyzed. Compared to normal breast tissues, the expression of 112 ISGs were significantly altered in breast cancer tissues. To determine the clinical significance of each of these ISGs, three publicly available gene expression datasets were analyzed to determine the impact of the individual ISGs on the overall survival (OS) of breast cancer patients. All analyses were stratified by clinical variables (age, grade, ER status, and lymph node positivity) and by study to evaluate the possible effects of clinicopathologic factors and ISG expression on survival outcomes. The scaled recursive partitioning (scaled RP) approach was used to classify patients into high and low expressers for each ISG analyzed. In univariate analysis, among 112 ISGs analyzed the expression of GNAS-4, IFI44L, and IFITM2 were correlated with poor prognosis. Whereas, the elevated expression of IFNGR-1, a receptor of IFNs, have been associated with better prognosis, further suggesting dual (adverse and beneficial) effects of IFN signaling in breast cancer. Among the ISGs with adverse outcome, GNAS-4 had the maximal impact on overall survival followed by IFI44L and IFITM2. Elevated expression of GNAS-4 reduced 15 yrs. overall survival by 236%, IFI44L and IFITM2 reduced the overall survival by 232 and 150 percentage respectively. GNAS gene encodes the G protein  $\alpha$ -subunit and transmits growth factor and hormonal signals to the effector proteins. In agreement with our results, upregulated GNAS has been associated with pituitary and renal tumors. Thus, our studies suggest that elevated expression of GNAS-4 may perturb canonical tumor suppressing activity of innate immune signaling to drive poor prognosis in breast cancer patients.

### **Anti-Semitism in Hitler Youth Literature**

*Darina G. Davis*  
*Department of History*

Following research for my thesis entitled *Indoctrinating Youth: Nazi Nationalism and Ideology in Hitler Youth Literature*, one arching theme connects fairy tales of the Brothers' Grimm and Hitler Youth Literature: anti-Semitism. In promoting German nationality, fairytales recorded by the Grimm Brothers enhanced purity in blood with a strict anti-foreign policy. With the foundation paved, each generation after continued programs to unite Germans into a national identity. Therefore, as Hitler rose to power, this anti-foreign policy transformed into a direct attack on those of Jewish descent. Anti-Semitic, anti-foreign youth literature was distributed specifically to inform the youth of Germany the ills that would befall the country should the Jew remain in its borders. Each step helped to establish a nationality that would exclude those without Germanic heritage. The purpose of this concentrated view of anti-Semitism is to gain insight into the national and ideological concepts that helped to re-enforce German superiority. Illuminating anti-Semitism in German history can broaden the understanding of the version of German ideology and nationalism that occurred under the Third Reich.

### **Friend Accuracy of Ingroup Identification**

*Tana Hall and Stephen Reysen*  
*Department of Psychology, Counseling, & Special Education*

In the present study we propose to examine the accuracy of friends' ratings of identification with various ingroups (e.g., student, Texan). In a pilot study, we found that friends were able to accurately rate each other's degree of Texan identification (i.e., psychological connection with the group—Texan). Friends will be randomly assigned to rate each other's degree of identification with either (1) student, (2) Texan, (3) American, (4) human, or (5) global citizen. We are currently collecting data, however we predict that friends will be relatively accurate in their ratings of each other's degree of identification.

S3.07

**Title: From Neutron Skins to Neutron Stars**

*F. J. Fattoyev*

*Department of Physics & Astronomy*

A precision measurement of the neutron skin thickness of heavy nuclei provide stringent constraints to several astrophysical observables including properties of neutron stars. We study the degree of correlations between the neutron skin thickness of lead and properties of neutron stars within the FSUGold relativistic mean-field model. We find a strong correlation to emerge between the neutron skin thickness and the low-mass neutron star radii, the neutron-star matter properties at Urca onset, the proton fractions at high densities, and the pressure of pure neutron matter at saturation and sub-saturation densities. The parity radius experiment (PREX) is determined to measure the neutron skin thickness of lead to 1% accuracy by using the electroweak parity-violating electron scattering on  $^{208}\text{Pb}$ . We suggest that a follow-up PREX measurement, ideally with a 0.5% accuracy, could significantly constrain the equation of state of neutron-star matter

## **Origins and Implications for Outcomes-Based Funding in Texas Higher Education**

*Kim Laird and Joyce A. Scott  
Educational Leadership*

Designed to incentivize institutions to attain predetermined goals, the accepted business practice of pay for performance is gaining ground in American public higher education. As the public continues to demand that higher education operate within the intuitively comfortable business model, legislatures are responding with programs that tie funding to institutional performance. Driven by an unprecedented focus on college completion, public higher education faces increasing pressure to show greater productivity in the form of outcomes. After decades of enrollment-driven state funding, more and more state legislatures, prompted by a desire for higher graduation rates, have added outcomes-based components to their funding models.

Institutions face a multitude of challenges in this funding environment, two of which are the focus here. First, while outcomes in the business world generally measure actual output, legislatures and coordinating agencies must rely on graduation and retention metrics that may be easily quantifiable, but are mere substitutions for the true outcome of higher education: learning. Second, by changing the basis for a major source of funding, albeit a decreasing one, states are challenging institutions to initiate strategic changes in order to strike a balance between achievement on state completion goals, fiscal stability, and educational purpose.

Recognizing that public institutions must be able to plan strategically for the dramatic transition from input- to output-based funding, and assess the impact on operations, the present study outlines the features of an enrollment- versus outcomes-based funding program and proposes a model for projecting the impact of the change for Texas universities. Based on the parameters of the recently announced outcomes-based funding plan for Texas and created in Microsoft Excel, the model underscores the dangers of relying on substitution measures for actual outcomes, and calls attention to possible unintended consequences of the transition to outcomes-based funding.

**Possible Protein Interaction between Maspardin and ALDH18A1 in Mast syndrome**

*Mary Mason and Michael Hanna  
Biological and Environmental Sciences*

Hereditary Spastic Paraplegias (HSPs) are a family of neurological disorders characterized by weakness and spasticity of the lower limbs and sensory impairment. Mast syndrome is a complicated, autosomal recessive form of HSP exhibiting symptoms of dementia, thinning of the corpus callosum, white matter abnormalities, and spastic paraparesis. Patients with Mast syndrome carry a mutation along their SPG21 gene producing a premature stop codon. Thus, Mast syndrome is likely due to loss of functional maspardin protein. Previous studies demonstrate maspardin interacts with ALDH16A1 and following maspardin deletion aldehyde dehydrogenase ALDH18A1, another member of the ALDH superfamily, was upregulated 1.66 fold suggesting an interaction between ALDH18A1 and maspardin may occur. Patients with a missense mutation, R84Q, exhibit progressive neurodegeneration and bilateral subcapsular cataracts. In recent studies, variants of ALDH18A1 were found to be significantly associated with dementia with Alzheimer's Disease in Down syndrome patients suggesting a link between ALDH18A1 and other neurodegeneration diseases. Interestingly, a new HSP has been found to be caused by a mutation within the ALDH18A1 gene and is being investigated. In vitro and in vivo immunoprecipitation analyses suggest an interaction occurs, whether this interaction is direct or indirect will be determined as well as the interaction domains.

## **An Evaluation of the Reliability and Predictive Validity of the LSI-R on a Gendered Sample: Moving the Discussion Forward**

*Christina Gammon and Melinda Schlager  
Department of Sociology and Criminal Justice*

Data indicate that the number of women per capita involved in corrections has grown by 48% since 1990 compared with a 27% growth over the same time period for men (Greenfeld and Snell 1999). Research indicates that age, offense type, drug history, and length of criminal history directly impact likelihood of recidivism and that women tend to recidivate less than men (Kruttschnitt and Gartner 2003). Recognizing and understanding differences between male and female offenders can also translate into potentially meaningful gender-specific supervision and case management protocols. Recently, scholars have intensified the discussion regarding the applicability of current risk/needs assessment instruments to female offender populations. The present research evaluates a sample of 101 female offenders in an attempt to enhance and extend the current state of knowledge about the reliability and validity of the LSI-R as it relates to gendered offender populations. Empirical and practical considerations are addressed.

Results indicate that the LSI-R is a reliable assessment of risk/needs when administered to a sample of female offenders. Moreover, in this analysis, the LSI-R also demonstrates predictive validity. These outcomes complicate the arguments of some feminist scholars about the LSI-R and how well it works at assessing women.

## **The Aging US Farmer and Agricultural Policy Implications**

*Frannie Miller*

*Department of Economics and Finance*

The average age of US Farmers continues to increase. In the past three farm censuses the average age of farmers has risen from 54.0 in 1997 to 55.3 in 2002 and 57.1 in 2007. Between 2002 and 2007, the number of farmers below age 45 shrunk by 14 percent and the number of farm operators age 65 and over increased by 22 percent. The United States Department of Agriculture has responded to the trend through operation of the beginning farmers and ranchers loan program. The Farm Service Agency, as of February 2010, has made 5,854 loans to beginning farmers totaling \$660,601,000. This constitutes 35% of the agencies total agricultural lending. Congress is also trying to address the issue, The Family Farm Preservation and Conservation Estate Tax Act of 2011 is a proposal to amend the tax code to exclude the value of property used as a farm from the gross estate value of a decedent. This study utilizes USDA Agricultural Census data from 1997, 2002, and 2007 to investigate changes in farm demographics during this time period by state.

### **Consequences of Interferon Stimulated Gene(s) Dysfunction in Breast Cancer**

*Venu Cheriya<sup>1\*</sup>, Sravan Vemuri<sup>1</sup>, Steven Ingram<sup>1</sup>, and Melissa Kuhns<sup>2</sup>*

*<sup>1</sup>Department of Biology and Environmental Sciences, Texas A&M University – Commerce, TX, USA, <sup>2</sup>CymboGenDx LLC, CA, USA.*

While various tumorigenic mechanisms have been identified in breast cancer, the role of interferon stimulated genes (ISGs) in this process remain unclear. Traditionally, upregulation of ISGs have been thought to mediate immune surveillance functions of interferons (IFNs) and thus be beneficial to cancer patients. In contrast, for the first time we demonstrated the direct role of an ISG called G1P3 in breast cancer development and progression. Compared to normal breast tissue, G1P3 was upregulated in malignant epithelium (50x higher). In accord with its overexpression in early stages of breast cancer, in morphogenesis assays G1P3 enhanced the survival of MCF10A acinar luminal cells causing hyperplasia by suppressing detachment-induced loss of mitochondrial potential and apoptosis (anoikis) that clears luminal cells. Downregulation of G1P3 induced spontaneous apoptosis in BT-549 breast cancer cells and significantly reduced the growth of ER<sup>+</sup> breast cancer cell MCF-7 ( $p \leq 0.01$ ) further suggesting its prosurvival activity. More importantly, elevated expression of G1P3 was significantly associated with decreased relapse free and overall survival in ER<sup>+</sup> breast cancer patients ( $p \leq 0.01$ ). While G1P3 was originally identified as an interferon stimulated gene, in our ongoing studies we discovered its induction by protein kinase C signaling. Since elevated expression of G1P3 was associated with poor prognosis in breast cancer, metaanalysis of three clinical studies were carried out to identify ISGs with prognostic significance. Among 112 significantly ( $p < 0.05$ ) upregulated ISGs, three ISGs (GNAS-4, IFI44L and IFITM2) were associated with poor prognosis. In contrast, elevated expression of IFNGR-1 was associated with better prognosis, further confirming the dual role of IFN-signaling in breast cancer. Characterization of the tumor promoting activities of some of these ISGs will provide unique opportunities to inhibit their activity to achieve better therapeutic effects with reduced side effects than conventional anticancer therapies.

### **Social Networks and Online Identities**

*Geronimo Perez<sup>1</sup>, Stephen Reysen<sup>1</sup>, Robin Reid<sup>2</sup>, Janarathan Gnanachandra<sup>3</sup>, Shalini Reddy<sup>3</sup>*

*<sup>1</sup> Department: Psychology, Counseling, & Special Education (College of Education and Human Services)*

*<sup>2</sup> Department of Literature & Languages (College of Humanities, Social Sciences, & Arts)*

*<sup>3</sup> Department of Computer Science & Information Systems (College of Sciences, Engineering, & Agriculture)*

This project focuses on the space where language, identity, and the internet intersect by melding the quantitative methods of Psychology with the linguistic and rhetorical methodologies of English to analyze discourses of minority and majority fans in online communities. Under the direction of a Psychology doctoral student, students in the computer science laboratory will develop a web spider to crawl the web and collect millions of written texts of interactions between members of online fan groups. Researchers from both English and Psychology to explore online fan group behavior will then analyze these texts. In this session we will describe the methods used to construct the web crawler and research regarding social networks.

## **Rossby Waves in Neutron Stars and the Spin Periods of Recycled Pulsars**

*William Newton*  
*Department of Physics & Astronomy*

Old neutron stars in binary systems accrete matter from their companion star, spinning up in the process. If this occurs for a long enough time, the neutron star will be spun up until it becomes unstable and begins to lose mass from its equator. However, no neutron star has been observed with a spin close to its break-up frequency. It might be that we have just been unlucky, or that there is a selection effect arising from the time resolution of our telescopes. Another possibility is that another mechanism is at work to limit how fast a neutron star can spin. We explore one possible mechanism, that of r-modes (analogous to Rossby waves in the Earth's atmosphere) that are driven unstable and radiate away angular momentum in the form of gravitational waves. We investigate the sensitivity of the r-mode instability window to the nuclear equation of state that determines the global structure of the neutron star.

**Moment of Inertia of the Inner Crust 'Napkin Ring'**

*Joshua Hooker and Bao-An Li*  
*Department of Physics & Astronomy*

Glitches in pulsars are occasional, sudden increases in their rotation frequency as the pulsar otherwise steadily spins down. A broad class of glitch models suppose the sudden spin-ups are due to angular momentum transfer between some of the crustal superfluid neutrons and the rigid crust plus anything that couples to it on timescales shorter than the pulsar period. Using a set of neutron star equations of state which span the experimentally constrained range of asymmetric nuclear matter properties, we calculate the moment of inertia of crustal superfluid neutrons for slowly rotating neutron stars, which is related to the glitch size in such models. We restrict the calculation to just those superfluid neutrons that form strongly pinned vortices in the crust, which corresponds to a 'napkin ring' shaped annulus of the crust, and compare the resultant estimates of glitch sizes with observations. We explore the effect of the coupling of the crust neutrons to core components of the star on the glitch size.

**“The Public Interest Must Dominate:” Herbert Hoover and the  
Public Interest, Convenience and Necessity**

*John Mark Dempsey and Eric Gruver  
Department of Mass Media, Communication & Theatre*

In the embryonic years of American broadcasting, Secretary of Commerce Herbert Hoover profoundly affected the development of American broadcasting. Hoover, in fact, was the first to articulate the public-interest standard. Today, in the digital age, broadcasting struggles with the public-interest issues of monopolization, censorship, the quality and content of programming, and the decline of localism, also concerns in Hoover’s time. And so it is useful to understand what Hoover meant by public service in broadcasting and to what extent broadcasting has achieved Hoover’s vision of the public interest.

S4.08

### **Stress Management in a Business Process Outsourcing Company**

*Azra Naveed Fnu*  
*Finance and Technology Management*

In developing countries like India, employees of information technology and business process outsourcing (BPO) firms are experiencing high stress levels that lead to lower productivity and higher attrition rates. With their irregular hours and strenuous working conditions, companies in the BPO sector have been negatively impacted by the stress syndrome. This study is focused upon the causes of employee stress and how it affects their productivity. The survey was conducted among 50 employees working in a BPO to determine the various causes of stress and ways to manage and alleviate stress.

## Effect of Quark-Hadron-Phase-Transition in Neutron Stars on Gravitational Waves

*Jeffrey Campbell and Bao-An Li*  
*Department of Physics & Astronomy*

Einstein's theory of general relativity has predicted the existence of Gravitational waves, however despite the efforts of the international physics community there have been no signals detected. It is likely that in the next decade Gravitational wave signals will be detected due to improvements on existing gravitational wave detectors. Once this is achieved a new window into our universe will be opened to investigate previously unobservable astronomical effects. Gravitational waves are produced by accelerating matter provided that its motion is not spherically or cylindrically symmetric. For example a Binary system of stars or a massive object with a bulge about its equator will produce Gravitational waves but a perfectly spherical stationary spinning star will not. Though the gravitational waves that will be detected are produced by massive objects, the microscopic world can have a large impact on the production of the Gravitational wave signals. A Neutron Star is a very compact stellar remnant of a massive star after it has undergone a Super Nova. They have radii of about 15km and masses about 1.6 times that of our sun, making them the densest observable objects in the sky. The density is so high in fact that it is predicted that there could be areas of transition from Hadron matter (protons, neutrons, etc.) to Quark matter and even areas of pure Quark matter. I will explore these regions effects on the production of Gravitational waves.

## **Phytoremediation of Arsenic Contaminated Soil by *Rudbeckia hirta* Inoculated With Mycorrhizal Fungi**

*Beth Felix and Chip Fox*

*Department of Biological and Environmental Sciences*

An area of land located in northeast Commerce, Texas has been designated a state superfund site since 1994 due to its high concentration of arsenic. It was delisted in 1998 after being cleaned up. A state superfund site is a hazardous waste site that the Texas Commission for Environmental Quality has placed as a top priority for cleanup and remediation. The main contributor to the arsenic contamination originated from the Hi-Yield Chemical Plant that manufactured arsenic-based herbicides and pesticides. During cleanup, much of the highly-contaminated soil was excavated and transported to a central location within the community. The area was then fenced and supplied with warning signs, with nothing being done to reduce the level of contamination in areas with lower concentrations of arsenic. This study aids in finding a feasible solution to further reduce the arsenic contamination by examining the phytoaccumulation potential of *Rudbeckia hirta* (black-eyed susan) inoculated with arbuscular mycorrhizal (AM) fungi. *R. hirta* has shown remediation potential in previous studies and AM fungi is known to uptake phosphorous which is similar in chemistry to arsenic. Several groups of *R. hirta* were planted in both arsenic-contaminated soil and arsenic-free soil to determine the fungi-inoculated plants' effectiveness in removing arsenic from the soil. It was concluded that *R. hirta* does have phytoremediation potential that may aid in the cleanup of arsenic contaminated areas. However there was no statistically significant increase in the rate of absorption between the fungi inoculated group and the arsenic control group, and further research is necessary to determine the phytoremediation effects of mycorrhizal inoculant.

**Dominance and Reproductive Success in Syntopic Nesting Barn Swallows (*Hirundo rustica*) and Cave Swallows (*Petrochelidon fulva*)**

*Ashleigh Sherrard and Jeff Kopachena*  
*Department of Biological and Environmental Sciences*

In recent years, Cave Swallows (*Petrochelidon fulva*) have exhibited significant range expansion throughout the southwestern United States. In Texas, this range expansion has coincided with the sudden decline of Barn Swallow (*Hirundo rustica*) populations. Recent studies have attributed this negative trend to the presence of Cave Swallows in Barn Swallow breeding colonies, suggesting that competition exists among mixed breeding colonies. The purpose of the study is to determine the correlation between dominance and reproductive success among syntopic nesting Barn and Cave Swallows in northeast Texas.

**Growth Optimization of *Chlamydomonas reinhardtii* for Pyrolytic Conversion**

*Henry Patrick MacKnight, Christina Presti, Blake Hart, and DongWon Choi*  
*Department of Biological and Environmental Sciences*

Microalgae are photosynthetic microorganisms with the ability to store excess energy and carbon as lipids. Microalgae can be a superior feedstock for pyrolytic conversion process when compared to woody biomass due to i) the lack of ligneous components, ii) the faster growth, iii) the less use of land mass for the cultivation, and vi) better and faster acclimation to elevated CO<sub>2</sub> level enabling the direct CO<sub>2</sub> mitigation from flue gas lines. Pyrolytically converted microalgae (bio-crude) is a potential drop-in replacement of conventional fossil crude oil as existing fuel refinery platform can further process the bio-crude. This is the first microalgae growth optimization attempt with regards to pyrolytic conversion using *Chlamydomonas reinhardtii* as a model microorganism. Oil contents of the microalgae, an important determinant of pyrolysis efficiency, have been tested at different growth conditions to find out optimal growth conditions. Dry weight, oil, starch, and protein content of the biomass were determined for each growth condition.

## **A Study of the Niche Structure and Habitat Utilization of Urban Dwelling Winter Birds**

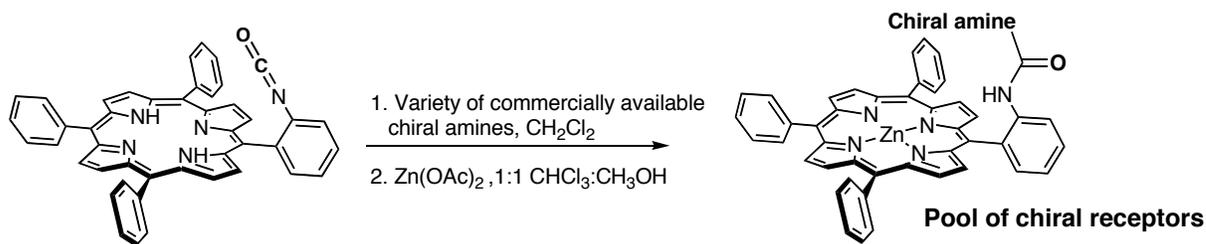
*Thomas P. Huff and Jeff Kopachena*  
*Department of Biological and Environmental Sciences*

The landscape in northeast Texas is interspersed with many cities and towns and provides a good opportunity to study the impact that urban development has on avian species richness and community composition. In this study we examined avian habitat utilization and avian community structure for birds found in the city of Sulphur Springs, Texas. Habitat types were defined according to the City of Sulphur Springs zoning map: Residential, Commercial, industrial, and Public Use. Species occurrence was measured using the Point – Count Method, allotting 15 minutes at each randomly chosen location. Each of eight locations within each urban zone was censused twice, resulting in a total of 64 observation periods. . Data were collected from xx January 2012 through 26 February 2012 and all counts were conducted between 12:00 h and 16:00 h each day to ensure a consistent sampling. The relative abundances of each species will be compared among zoning types and evidence of community associations will be determined using association indices.

## Synthesis of Chiral Porphyrins and Structural Studies of their Host:Guest Complexes

*Karthik Akinapelli and Stephen Starnes*  
*Department of Chemistry*

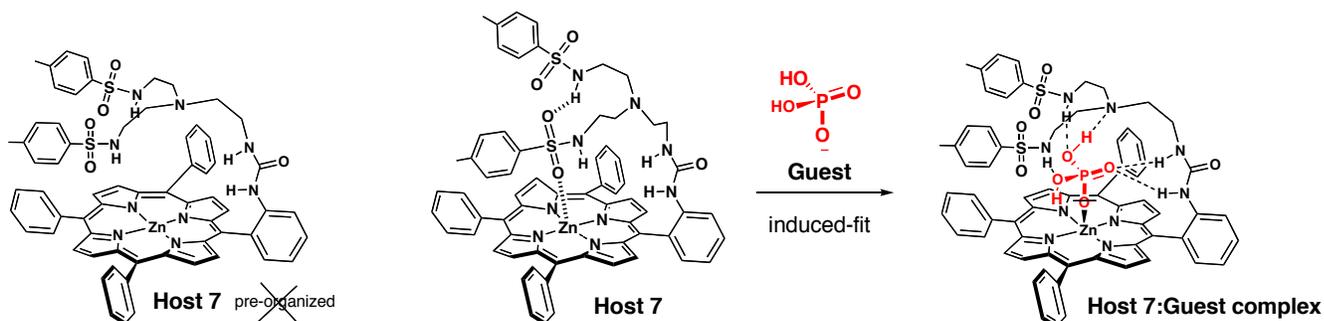
The synthesis of a pool of diverse chiral porphyrin host compounds using the principles of Click chemistry is reported. The chiral recognition properties of several porphyrin-based hosts with chiral carboxylate-containing guests and chiral amines L-nicotine and ephedrine stereoisomers is described. Several hosts display a conformationally-induced organization upon binding to guests. Binding constants of the chiral porphyrin hosts with guests, which was determined by UV/Vis titration studies, will be reported. Structural insight into the host-guest complexes, which was obtained from  $^1\text{H-NMR}$  studies, will be reported.



## Porphyrin Hosts for the Shape-Selective Recognition of Anion Guests

*Anusha Bommedi and Stephen Starnes*  
*Department of Chemistry*

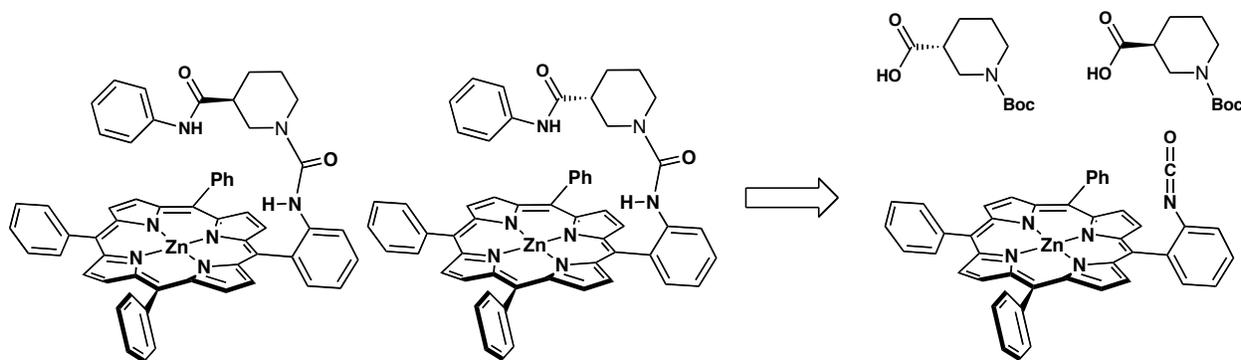
In this work, we illustrate that selective anion receptors can be obtained by rational host design – selectivity can be obtained by complementing the shape and binding motifs of the target anion guest. The porphyrin hosts reported here bind anions through cooperative metal coordination and hydrogen bond interactions. We report here the synthesis of eight porphyrin hosts and their recognition properties with eleven anion guests that vary in geometry: spherical (chloride, bromide, and iodide), ‘bent’ (acetate, nitrite), trigonal planar (nitrate, carbonate), and tetrahedral (perchlorate, perrhenate, hydrogen sulfate, and dihydrogen phosphate). The porphyrin hosts are functionalized at one meso position with one, two, or three anion binding sites that work in tune with the porphyrin metal center to create a binding pocket for bent, trigonal planar, or tetrahedral anions. Thus, a key aspect of the work centers on the design of the receptors with anion recognition elements that are pre-positioned to mimic the geometry of the anion target. Selectivity in guest binding stems from a complexation-induced conformational change in porphyrin hosts upon anion binding.



## Nipecotic Acid-Porphyrin Derivatives: Chiral Anion Recognition

*Xiaowen Wu and Stephen Starnes*  
*Department of Chemistry*

We report here the synthesis and recognition properties of chiral porphyrin receptors for chiral guests. The key structural feature of the synthetic receptors centers on the functionalization of one meso position of tetraphenylporphyrin with a chiral anion recognition moiety, in this case amide derivatives of (R)- and (S)-Nipecotic acid (piperidine-3-carboxylic acid). The piperidine amide substituent projects into the cavity of the porphyrin host and is available for hydrogen-bond interactions with guests. Metallation of the porphyrin provides an additional guest-binding site. The chiral recognition properties of the hosts with chiral guests such as amino acid derivatives, the pharmaceutical agents Ibuprofen and Naproxen, other chiral carboxylates such as tetrabutylammonium malate and chiral amines such as ephedrine stereoisomers and nicotine will be reported. The recognition properties of the hosts were examined using Uv/Vis and NMR titrations.



## **Self-Esteem and the Motivation to be a Global Citizen**

*Loretta Larey*

*Department of Psychology, Counseling and Special Education*

In one study ( $N = 505$ ) we examined the relationship between (a) changes in belief regarding reasons to be a global citizen, and (b) change in global citizenship identification. A variety of motivators or reasons have been examined in psychology to explain why people belong to groups. The main reasons include self-esteem, meaning in life, competency, self-continuity, belongingness, uniqueness, uncertainty reduction, social support, worldview, and self-verification. In the present study we assessed (1) each of the (above) motivations to belong to the group 'global citizen' and, (2) identification with the group by administering a survey to students at the beginning and end of a college semester. Students' increased motivations of self-esteem and meaning in life uniquely predicted greater identification with global citizens over the course of the semester. Thus, students perceived being a global citizen as providing them greater self-esteem and meaning in life, and the increase in perceived benefits over time predicted greater identification with the group global citizen.

## **The Influence of Beliefs about Memory, Sex, and Study Time Effectiveness on Memory Performance**

*Cristina Sifuentes and Lacy E. Krueger  
Department of Psychology, Counseling, and Special Education*

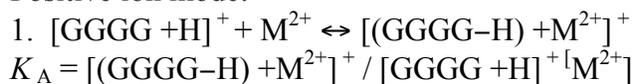
Previous research has suggested that there are various factors that influence the amount of information individuals recall. Beliefs about memory (Beaudoin & Desrichard, 2011), an individual's sex (Hertzog, Dixon, & Hultsch, 1990), and how well individuals allocate their study time (Price, Hertzog, & Dunlosky, 2009) have all been shown to influence memory performance. Yet, the relationship among these variables has not been investigated. The goal of the present study was to determine whether memory self-efficacy, sex, and study time allocation influences an individual's memory task performance. Seventy-five undergraduate students assessed their memory capabilities (i.e. ability to remember people's names) and then performed a multitrial verbal learning task. They were asked to learn Swahili-English word translations across three study and recall trials. Our preliminary results show recall performance was positively correlated with study time effectiveness, and sex differences in memory task performance and memory self-efficacy approached significance. The small sample size may be the reason for the lack of significance between memory self-efficacy and recall performance, and we are currently collecting more data to address this issue.

## Mass Spectrometry Study of Tetraglycine Associated with Selected Metal ions: Manganese, Cobalt, Nickel, Copper and Zinc

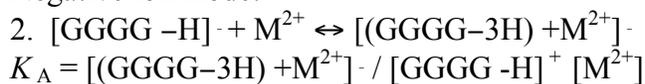
*Archana Gujjari and Laurence Angel  
Department of Chemistry*

The research presented here is focused on the interactions between transition metal cations and peptides. The binding affinity of transition metal cations  $Mn^{2+}$ ,  $Fe^{2+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$  and  $Zn^{2+}$  with tetraglycine (GGGG) peptide have been determined by experimental and computational approaches. Molden and Gaussian are the two computational software programs used to develop structure for the tetraglycine peptide associated with different metal ions such as  $Mn^{2+}$ ,  $Fe^{2+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$  or  $Zn^{2+}$ , optimize and perform their frequency calculations. Molden has a powerful Z-matrix editor which gives full control over the geometry and allows building molecules from scratch, including polypeptides. A basis set is required to determine the initial geometry of the structure. The geometry optimized molecular structure of tetraglycine peptide associated with different metal ions is obtained using the MPWIPW91 level of theory and the 6-311+G (d,p) basis set. The stock solutions of metal ions  $Mn^{2+}$ ,  $Fe^{2+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$  and  $Zn^{2+}$  and the tetraglycine peptide of  $1 \times 10^{-2} M$  are prepared and the stock solution of peptide and different metal ions are mixed in the ratio of 5:1 (metal: peptide) and are set aside for few minutes to bind metal ions to the peptide. Then the solutions are further diluted to  $1 \times 10^{-5} M$  and the samples are analyzed using mass spectrometry in positive ion mode and negative ion mode. The binding sites and Apparent association rate Constants  $K$  are calculated and their binding affinities are compared by using the following equations.

Positive ion mode:



Negative ion mode:



Where,  $K_A$  = Apparent association rate constant for the formation of the metal ion – tetraglycine complex from the protonated peptide  $[GGGG +H]^+$  or deprotonated peptide  $[GGGG-H]^-$  and metal ion  $M^{2+}$ .

$M^{2+}$  = is either  $Mn^{2+}$ ,  $Fe^{2+}$ ,  $Co^{2+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$  or  $Zn^{2+}$ .

## **Global Companies**

*Andrea Slobodnikova, Jennifer Flanagan, Shonda Gibson, and Stephen Reysen  
Dean's office*

The purpose of the current set of studies is to examine the influence of identities on perceptions of companies. Prior research (Snider, Reysen, & Katzarska-Miller, in press) has shown that one's degree of global citizenship is positively related to desire to protest against unethical corporations. The present studies will examine whether the salience of subgroup or superordinate identities will affect the perception of companies.

The purpose of the first study is to examine the effect of priming identities (United States vs. global citizen) on participants' perception of companies (entrepreneur vs. corporation) that perform either good or unethical actions. In this study participants will read an informed consent form and volunteer to participate. Participants will be randomly assigned to rate their similarity to either US citizens or global citizens, read about an entrepreneur or company doing a pro-social or unethical act, and rate items regarding their perception of the company and actions toward the company.

The purpose of the second study is to examine the effect of priming (United States vs. global citizen) on participants' perception of companies (United States or international) that perform unethical actions against the US or another country. Participants will read an informed consent form and volunteer to participate. Participants will be randomly assigned to rate their similarity to either United States citizens or global citizens, read about a United States or international company committing an unethical act that harms people in the United States or another country, and rate items regarding their perception of the company and actions toward the company.

## Global Hiring

*Natalia Assis, Jennifer Flanagan, Shonda Gibson, and Stephen Reysen  
Dean's Office*

The purpose of our set of studies is to examine the influence of identities on hiring practices. Prior research (Snider & Reysen, 2011) has shown that job applicants who identify with a superordinate identity (i.e., global citizen) are viewed as more desirable job applicants than applicants who do not identify with a group. Our studies will examine if the salience of subgroup or superordinate identities will affect the perception of applicants.

The purpose of Study 1 is to explore the characteristics of prototypical employees for (1) United States job position, (2) global job position, (3) global citizen, or (4) entrepreneurship. Participants will be randomly assigned to describe the prototypical person for the position and rate a number of characteristics regarding the ideal employee for the position.

The purpose of Study 2 is to examine the hiring decision of participants primed with either a United States or global citizen identity. Participants will be randomly assigned to rate their similarity to either United States citizens or global citizens and rate a number of items (e.g., willingness to hire, likability) regarding either a US or international job applicant. We expect that participants primed with a global citizen identity will be more likely to hire an international applicant.

The purpose of Study 3 is to examine the hiring decision of participants primed with either a United States or global identity. Participants will be randomly assigned to unscramble sentences that contain either global words (global prime) or neutral words (control conditions), rate their emotional experience, and rate a number of items (e.g., willingness to hire, likability) regarding either a United States or international job applicant.

The purpose of Study 4 is to examine the influence of primed identity (United States or global) on participants' willingness and opinion regarding an employee (male or female) for a job (United States position or global position). Participants will be randomly assigned to rate their similarity to either United States or global citizens, read a description of a male or female who is applying for either a United States or global job position, and rate items regarding the applicant (e.g., willingness to hire, likability).

The purpose of Study 5 is to examine the influence of primed identity (US or global) on participants' willingness and opinion regarding an employee (male or female) who differs in job experience (low vs. high expertise). Participants will be randomly assigned to rate their similarity to either US or global citizens, read a description of a male or female job applicant who is either marginally or highly qualified, and rate items regarding the applicant (e.g., willingness to hire, likability).

## **Plagiarism as a Threat to Public Identity**

*Shonda Gibson and Stephen Reysen*  
*Department of Psychology, Counseling, and Special Education*

In the current study ( $N = 118$ ), we examined plagiarism as a threat to one's public identity. The word, plagiarism, is a variant of a Latin verb *plagiarius*, meaning abduction and theft (AHA, 2011). Today, most people use the term to describe the unauthorized acquisition or use of music, pictures, information, work, or ideas (APA, 2009). The concept contains the connotation that another person is stealing, lying (LaFollette, 1992), and more generally intentionally attempting to pass off someone else's work or ideas as their own (Alam, 2004).

An individual's public identity, or personalized sense of self, consists of behaviors and characteristics that are observable by others and allow an individual to feel distinct and unique (Becker, 1971; Brewer, 1991; Brewer & Gardner, 1996). Characteristics such as one's personality (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), clothing (James, 1890; Leary, 1995), and hairstyle (Simon, 2004; Schlenker, 1980) are unique and distinct personal expressions that publically distinguish one person from another. A variety of personal expressions, attributes, and characteristics, including personal values, goals, emotions, and ideas comprise one's public identity (Cheek, Underwood, & Cutler, 1985).

Threats to one's personal public identity have been examined in relation to copycatting (Reysen, Landau, & Branscombe, 2010a, 2010b), gossiping (Snider & Reysen, 2010), and relationship break-ups (Reysen & Katzarska-Miller, 2011). Across the research examining victims' reactions to threats to public identity the primary reaction is felt anger. Furthermore, the victims' perception that the copier is attempting to harm their public identity and that the situation is illegitimate mediates the situation between the threat and anger.

In the current study, participants were randomly assigned to read a vignette about another person copying their ideas with permission or without permission. Participants then rated their felt emotion, perception of the copier and situation, and endorsed behaviors. The results show that participants felt greater anger, perceived the situation to be illegitimate, felt the copying was more likely to harm their public image, and endorsed confronting the other person when the copying was done without permission compared to when permission was granted.

The relationship between the manipulation and felt anger was mediated by the intention to harm and illegitimacy of the situation. A mediation of the relationship between manipulation and felt anger was found with perceived intention to harm and illegitimacy of the situation. Furthermore, anger was found to mediate the relationship between the manipulation of plagiarism and endorsement of confronting the copier. Overall, the results suggest that anger felt by victims of plagiarism is due to the threat experienced toward one's public identity

## Selective Hydrogenation of Acetylene over Pd on [Bmim][PF<sub>6</sub><sup>-</sup>] and [Bmim][BF<sub>4</sub><sup>-</sup>]-loaded SiO<sub>2</sub> support

*Kristine Jang, Juana Rivas, and Ben Jang  
Department of Chemistry*

Ionic liquid loaded supports (ILLS) for Pd as heterogeneous catalysts have been receiving increased attention for selective hydrogenation. This investigation focuses on [Bmim][PF<sub>6</sub><sup>-</sup>] and [Bmim][BF<sub>4</sub><sup>-</sup>]-loaded, silica-supported Pd catalysts. Selective hydrogenation of acetylene in a large excess of ethylene is used as a probe of selective hydrogenation to test the capabilities of the catalysts. The reaction conditions used includes a reduction condition of 100 °C/2hr and a H<sub>2</sub>/C<sub>2</sub>H<sub>2</sub> ratio of 10/1. The [Bmim][BF<sub>4</sub><sup>-</sup>] catalyst shows the highest catalytic activity at these specific reaction conditions. The comparison of acetylene conversion, ethylene selectivity and ethylene yield of the two catalysts will be reported in detail.

## **Tracking a Single Object with a Shrinking Active Contour & Modified Kalman Filter**

*Pravinkumar Kandhare, and Nikolay Metodiev Sirakov  
Department of Computer Science, Department of Mathematics  
(pkandhare@leo,Nikolay\_Sirakov )@tamu-commerce.edu*

In this research, we present a new approach for tracking a single object in video frames sliced from video. Our approach uses shrinking active contour model in order to determine the real position of the contour in the present frame. The contour points are used to calculate (measure) the center of mass of the real object in the present frame. The position of the center of mass estimated in previous frame is mapped into the present frame. Both estimated & present positions of the mass center are used by the Kalman filter to estimate the mass center position in the next frame. To do so we modified the Kalman filter to work with our active contour model. An illustration of how algorithm works is given in the presentation.

## **Maspardin-Rab7 Coupling and Development of Neuropathic Phenotype**

*Anne Davenport and Michael Hanna  
Department of Biological and Environmental Sciences*

The hereditary spastic paraplegias (HSPs) are a group of neurological disorders characterized by progressive spasticity and weakness of the lower limbs. Mast syndrome (SPG21), one form of HSP, is marked by progressive spastic paraparesis, weakness and spasticity of the lower limbs. SPG21 is caused by a frameshift mutation of the ACP33/maspardin gene resulting in truncation of the 308-amino acid maspardin protein likely leading to loss of functional protein. It has been determined through immunocytochemistry that maspardin co-localizes with late endosomes and is possibly a vital component of intracellular signaling. Recent studies indicate that Rab7 possibly interacts with maspardin. Rab7 is a small GTPase responsible for regulating transport from early to late endosomes in the endocytic pathway. It has been shown that mutations in Rab7 are responsible for Charcot-Marie-Tooth (CMT) type 2B neuropathy, a disease marked by chronic axonal degeneration with loss of nerve fibers. It has been demonstrated that maspardin deficient cells possess slowed degradation of EGFR in HeLa cells. Therefore, we propose that maspardin in conjunction with Rab7 is necessary for proper vesicle trafficking. Rab7 sub-cellular localization will be compared in maspardin expressing and deficient cells. In addition, differential maspardin localization will be investigated in fluorescently tagged Rab7 and fluorescently tagged Rab7 dominant negative expressing cells. In addition, *in vivo* interactions between maspardin and Rab7 will be done through immunoprecipitation and confirmed. Further studies of the interactions between Rab7 and maspardin may help to determine the effect of maspardin deletion on intracellular communications and thus cell growth and possible disease pathogenesis.

**Deal or No Deal: Delayed Discounting, Anticipated Regret, and Persistence in Gambling**

*Erin Talley and Katie Shipman  
Department of Psychology, Counseling, and Special Education*

Three hundred and thirty two undergraduate students were asked to play a computerized version of the popular television game “Deal or No Deal”. The extent of problem gambling was assessed with the South Oaks Gambling Screen (Lesieur & Blume, 1987). This study examines the effects of regret on decision making in the context of gambling. It is hypothesized that if the anticipated regret over rejecting a sure win and incurring a possible loss in the next round is stronger than the anticipated regret over missing out on a possible win in the next round by accepting the sure win, then this would serve as an inhibitor to continued gambling. It is also hypothesized that problem gamblers would be less susceptible to the effects of regret than social gamblers. The results of this study confirm the importance of regret in the process of decision making. Anticipated regret seems to discourage people to continue gambling in the short run. Over the long run, they are more likely to disregard the regret they expect to feel. This research has important implications in the conceptualization of problem gambling as being influenced by cognitive and emotional factors.

**Comparative Studies of Metal Ion Labeling of Unreduced and Reduced Lysozyme at Different Charge States by ESI/MS and IMMS techniques**

*Sruthi Konakanchi.*  
*Department of Chemistry*

The purpose of the study was to compare the unreduced and reduced lysozyme interacting with metal ions electrospray Ionisation mass spectrometry (ESI-MS) and Ion Mobility mass spectrometry (IMMS) techniques. Ion Mobility mass spectrometry and mass spectrometry was used to study the conformational properties of the protein before and after metal ion labelling ( $\text{Zn}^{2+}$ ,  $\text{Fe}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Mn}^{2+}$ ).

## Habitat Association of Small Mammals on the Erwin Bottom

*Ryan Scauzillo and Jeff Kopachena*  
*Department of Biological and Environmental Sciences*

Small mammal communities are determined by many different factors. Most of these involve environmental elements that can be measured on a temporal and spatial scale. These elements conform to a small mammal's niche; in order to survive and reproduce the individuals of these species must select a habitat that allows it to fulfill its needs. Due to competition over years, species have developed a particular habitat in which they can survive and reproduce.

A study was conducted in the Erwin Bottom just north of Commerce, Texas, to examine habitat associations of the small mammal fauna. Five study sites were surveyed using Sherman live-traps; each site contained a 5 X 10 trapping grid with 10 meter spacing between traps. The traps were baited for three consecutive nights using a mixture of rolled oats and peanut butter. Cotton balls were also provided to be used as nesting material.

A preliminary analysis revealed that four species were captured: deer mouse (*Peromyscus maniculatus*), white-footed mouse (*Peromyscus leucopus*), hispid cotton rat (*Sigmodon hispidus*) and fulvous harvest mouse (*Reithrodontomys fulvescens*). It was also found that the cotton rats were only found in grassy habitat that contained little to no woody vegetation. Overall populations differed significantly among sites, being highest in the weedy field study site.

## Selective Hydrogenation of Acetylene over Pd on Ionic Liquid loaded SiO<sub>2</sub> Support

*Ting Zhou and Ben Jang  
Department of Chemistry*

Ionic liquid loaded supports (ILLS) for Pd as heterogeneous catalysts receive great attention for selective hydrogenation lately. This investigation focused on [Bmim][PF<sub>6</sub><sup>-</sup>] loaded silica supported Pd catalyst, using palladium acetylacetonate as the precursor. Selective hydrogenation of acetylene in a large excess of ethylene was used as a probe of selective hydrogenation reaction to test the capability of the catalyst. Reaction conditions used included reduction conditions of 100°C/2hr, 50°C/3hr and 25°C/3hr and H<sub>2</sub>/C<sub>2</sub>H<sub>2</sub> ratios of 2/1, 5/1, 10/1 and 20/1. The catalyst showed the highest catalytic activity with 10/1 ratio when reduced at 100°C/2hr. Reduction conditions of 100°C/2hr and 50°C/3hr had similar conversions and yields which were higher than that of 25°C/3hr with 10/1 ratio. Other catalysts on different supports, alumina and titania, were also tested in this study, silica generally led to higher catalytic activity by comparison. The catalyst also performed very good stabilities under 60°C/5hr, 90°C/5hr and 120°C/5hr reaction conditions with 10/1, 5/1, 2/1 ratios, respectively. The comparison of acetylene conversion, ethylene selectivity and ethylene yield of catalysts will be reported in details.

### **Discovery of a Human Heart RNA that Induces Myocardiogenesis**

*Andrei Kochegarov, Ashley Moses, Will Lian, Michael C. Hanna and Larry F. Lemanski  
Department of Biological and Environmental Sciences*

The axolotl, *Ambystoma mexicanum*, carries a c recessive lethal mutation that prevents normal embryonic heart development. In the heart of mutant embryos, expression of tropomyosin is reduced, the development of cardiac sarcomeres fails and the heart does not contract. Myofibril-Inducing RNA (MIR) from anterior endoderm of normal axolotl embryos restores expression of tropomyosin, promotes the formation of sarcomeric myofibrils and induces heart contractions. RNA from fetal and adult human hearts also rescues the axolotl embryonic mutant hearts. To identify the active RNA(s) in humans, we cloned the human heart RNAs and created a RNA library. Two human RNA clones were found to promote mutant axolotl heart development. The hearts treated with these RNAs beat rhythmically, and immunocytochemistry reveals tropomyosin expression and myofibril organization. The RNAs were sequenced; and interestingly, showed no sequence homology to the axolotl MIR. However, two active portions of the secondary structure of the axolotl MIR revealed significant similarities in secondary structure to the human RNA. We hypothesize that the strikingly similar areas of secondary structure in the human and axolotl RNAs are responsible for the rescue phenomenon in the mutant axolotl hearts and may be essential for normal heart development and cardiac myogenesis in all vertebrates.

Supported by NIH Grant HL-61246 and an AHA Grant to LFL.

**The Composition and Ecological Segregation of Snake Communities from the Erwin Bottom in Hunt County, Texas.**

*Jerrod G. Tynes, Lani Lyman-Henley, and Jeff Kopachena*  
*Department of Biological and Environmental Sciences*

A total of 19 species and subspecies of snakes have been recorded in Hunt County. These snakes utilize a variety of habitats, prey items and display a wide arrange of behaviors. The purpose of this study is to document the snake diversity and possible ecological segregation of snake species at the Erwin Bottom, just north of Commerce, Texas. Three Y shaped drift fence arrays will be used. Each array consists of 6 funnel traps, two per 50 foot drift fence arm. The traps will be checked daily and data will be collected on species, weight, length, sex, external parasites, and behavior. Habitat and vegetation type will also be assessed. The conclusion of the survey should yield data that helps to explain the relative abundance and community of snakes in the area. This data will then be compared to existing data on snake surveys in this part of Texas.