

## STEVEN GALOVICH MEMORIAL STUDENT SYMPOSIUM

Monday, April 4, 2011

### OPENING EVENTS

**SONNENSCHNEIN, ALBRIGHT, AND DEERPATH ART GALLERIES  
DURAND ART INSTITUTE AND DEERPATH HALL**

Moderator: Tracy Marie Taylor

**4:00-6:00** Student Art Exhibit with Gallery Talks and Reception  
(See list of student artists at end of program.)

Moderator: Gizella Meneses

**5:00-6:00** *Collage Readings – DURAND 208*

Creative writing from the modern languages in a rich variety of styles and genres

Tuesday, April 5

**DONNELLEY AND LEE LIBRARY, FIRST FLOOR LOBBY**

**9:30-3:00** Welcome Center

### ORAL PRESENTATIONS

**DONNELLEY AND LEE LIBRARY 203**

**Morning Session - 10:00-12:10**

**Panel 1** **The State of States**

Moderator: Siobhan Moroney

10:00-10:20 Fabricio Sordoni  
*China's Soft Power in Latin America: Implication for the Western Hemisphere*

10:20-10:40 Ioana Sirca Belintan  
*The Development of Civil Society in Post-Communist Romania*

10:40-11:00 Collin Lever  
*Islam and the State: Function Rather than Feature*

**Panel 2** **Jamaica and French**

Moderator: Amanda Felkey

- 11:10-11:30 Erin McGinley  
*Love or Money: Who Owns Falmouth, Jamaica?*
- 11:30-11:50 Tasheka Aikman  
*Why Has Jamaica Failed to Achieve Sustainable Growth? An Empirical Study Measuring the Impact of Various Socio-Economic Factors in a Developing Nation*
- 11:50-12:10 Annalise Parks  
*When the Tricolore Bleeds Over: The Appreciation for French Culture in Francophone Countries and Regions*

### **Afternoon Session – 1:00-3:10**

#### **Panel 3 Games, Music, Behavior**

Moderator: Robert Lemke

- 1:00-1:40 Elise Beckman  
Robin Cai  
Rebecca Esrock  
*Explaining Game-to-Game Ticket Sales for Major League Baseball Games over Time*

- 1:40-2:00 Aimee Lockwood  
*Sports and Academics: The Effects of Delayed Gratification*

- 2:00-2:20 Libby Wait  
*"I'm in a New York state of mind": The Role of Place in Hip-Hop Music*

#### **Panel 4 Parlez-vous Français? The Translation of French Literature**

Moderator: Cynthia Hahn

- 2:40-3:10 Emma Jo Chalverus  
Jeanne Engelkemeir  
Fabricio Sordoni  
*Translating "Women of the Twilight": Reading and Discussion*

### **DONNELLEY AND LEE LIBRARY 205**

#### **Morning Session – 10:00-11:20**

#### **Panel 5 Free Will, Language, Action**

Moderator: Janet McCracken

- 10:00-10:20 Karla I. Avila-Peregrina  
*Is Free Will An Illusion?*
- 10:20-10:40 Rachiny Samek  
*Asian Americans and Affirmative Action: the Need for a Reevaluation of Affirmative-Action Policies*

10:40-11:00 Thomas Bark  
*Does the Language We Speak Shape the Way We Think?*

11:00-11:20 Paul Henne  
*Fictional Discourse and Fictitious Entities*

**Afternoon Session – 1:00-3:20**

**Panel 6 Presidential Power**

Moderator: William Divane

1:00-1:20 Alexis Czarnecki  
*Soothing the Fighting Irish: Barack Obama's 2009 Commencement Address at the University of Notre Dame*

1:20-1:40 Katie Howson  
*Executive Power and the Courts*

1:40-2:10 Sarah Brune  
Yushin Kohara  
*Barack Obama and Open Government*

**Panel 7 All History is Local**

Moderator: Steve Schutt

2:20-2:40 Syndhia Javier  
*Lake Forest's Black History: A Glimpse into the Past*

2:40-3:00 Jennifer Lindblom  
*Howard Van Doren Shaw's Ragdale: Preserving American Arts and Crafts*

3:00-3:20 Courtney King  
*African-American Influence in Lake Forest*

**DONNELLEY AND LEE LIBRARY 221**

**Morning Session - 10:00-12:00**

**Panel 8 Composition Collaboration**

Moderator: Emilie Amrein

10:00-10:20 Mariana Garciagodoy  
Emily Hilgenberg  
Karen Larson  
*Dreamweaver, Sing: Celebrating the Marriage of Music and Text*

**Panel 9 Perspectives on Gender**

Moderator: Lisa Hinckley

- 10:30-10:50 Cleo Hehn  
*The Fallen Woman and the Fall of Society*
- 10:50-11:20 Kaitlyn Martin  
Farzeen Tariq  
*Portfolios of the Poor: Macro and Micro Empowerment of Women*
- 11:20-11:40 Katie McClain  
*Semper Gumby: A Memoir of a Military Girlfriend*
- 11:40-12:00 Karen Larson  
*H/e/a/r/e*

**Afternoon Session – 1:00-3:10**

**Panel 10 Culture and Society in Latin America**

Moderator: Ann Roberts

- 1:00-1:20 Laura Frye  
*Writing a Trilingual Children's Book in the Bolivian Highlands*
- 1:20-1:40 Eemeli Isoaho  
*From the Margin to Mainstream: Empowerment of Bolivian Indigenous Groups During the Government of Evo Morales*
- 1:40-2:00 Karen Larson  
*The So-Called Collapse of the Maya Civilization*

**Panel 11 Policy and Perception**

Moderator: Chad McCracken

- 2:10-2:30 Sara White  
*Smart US Foreign Policy: Regaining International Credibility*
- 2:30-2:50 Andrew Van Herik  
*What's Wrong With Torture?*
- 2:50-3:10 Jennifer Kurtz  
*Nationalism in the Media: Perspectives of the 2010 BP Oil Spill in the US and UK media*

**JOHNSON 100**

**10:00-12:00**

**Physics Demonstration**

Moderator: Michael Kash

- 10:00-11:00 David Curie  
Hussein Daraghma

Huy Hoang  
Kosova Kreka  
Michaelangelo Monterroso  
Matthew Morrison  
Lauren Swafford  
Stamen Tintikov  
*The Wonders of Light*

**Panel 12 Collisions and Resonance**

Moderator: Michael Kash

11:20-11:40 David Curie  
*Electron Molecule Collisions*

11:40-12:00 Lauren Swafford  
*Pulsed NMR*

**JOHNSON 215**

**11:00-12:00**

**Biology Demonstration**

Moderator: Shubhik DebBurman

Pascal Accoh  
Kayla Ahlstrand  
Grant Alexander  
Maria Basith  
Iqra Bhati  
Daniella Brutman  
Katrina Campbell  
Jessica Chin  
Jessica Dudley  
Paula Firmis  
Josh Forsman  
Jonathan Galamis  
*Exploring Medical Mysteries of the Human Brain*

Rabia Khan  
Rida Khan  
Paulis Kuprys  
Brianna Lemond  
Laura Lepping  
Menzi Mhlanga  
Anna Naditz  
Saajidha Rizvydeen  
Madhavi Senagolage  
Peter Sullivan  
Mira Trebilcock  
Ryan Vlaar

**JOHNSON 300**

**Morning Session - 11:00-12:00**

**SAACS Chemistry Demonstration**

Moderator: Elizabeth Fischer

11:00-12:00

Grant Alexander  
Amalia DeSardi  
Leah Frenette

Jennifer Kurtz  
Thandeka Mabuza  
Julian McLain

Trevor Nykaza

Tom Pospiech

*Flames, Fumes and Flashes: Students Fired Up About Chemistry*

Nadia Vinogradova

Maria Zawadowicz

### **Afternoon Session – 1:00-2:30**

#### **Panel 13 Civic Interaction and Awareness**

Moderator: Lou Lombardi

1:00-1:40 Gina Ambrose  
Samantha Herron  
Nicole Moore  
Farzeen Tariq  
*Community Interaction in North Chicago*

1:50-2:30 Leah Frenette  
Susie Helford  
Kristen Hernandez  
Minjin Kim  
Janet Martinez  
Mario Martinez  
Rachiny Samek  
*Raising Awareness One Bare Foot at a Time: TOMS One Day Without Shoes*

### **MEYER AUDITORIUM**

#### **Morning Session - 10:00-12:00**

#### **Panel 14 Communication, Psychology and the Senses**

Moderator: Kathy Dohrmann

10:00-10:20 Mario Baldassari  
*Understanding Lake Forest College's Flow of Information*

10:20-10:40 Ian Gonfinete  
*Baby Blue Tuesdays - Understanding Synesthesia*

10:40-11:00 Jocelyn Jaramillo  
*Predictors and Moderators of English Language Learners' Willingness to Speak English*

11:00-11:20 Mario Baldassari  
*Mnemonic Effects of Humor in Speeches*

11:20-12:00 Dong Ping Li  
Chia Maier  
Khine The  
*Does the Convenience of Accessibility to Water Sources Affect Water Drinking Behavior?*

**Afternoon Session – 1:00-3:00**

**Panel 15 Truth in Science: Animal Behavior and Evolution**

Moderator: Anne Houde

1:00-2:00 J. J. Conoscenti  
Sebastian Di Clemente  
Alex Reeder  
Kaila Stephens  
*Evolution Before Your Eyes*

2:00-2:20 Kaylyn Gasparotto  
*Diurnal Roosting Behavior of The White Tent-Making Bat Ectophylla Alba (Cheiropetara: Phyllostomidae) in Costa Rica*

2:20-2:40 Ryann Freeman  
*Neurophysiological Dimensions of Adult Attachment*

2:40-3:00 Shabana Yusufishaq  
*Can Isolated Rats Read Social Cues?*

**JIM KENNEY '59 TV LOUNGE (SKYBOX)**

**10:00-12:00**

**Theater Performances**

Moderator: Richard Pettengill

10:00-10:45 and 10:45-11:30

Hannah Breen  
Stephen Bromfield  
Keenan Buchanan  
Kevin Flynn  
*Improv Comedy Performance*

Ryan Goodwin  
Mariana Green  
Syed Hasnain  
Tanner Senter

**Panel 16 Spenserian Stanza Mock Epic**

Moderator: Randall Iden

11:40-12:00 Max Glassburg  
*Mock Thesis: The Epic*

**YOUNG HALL 111**

**Morning Session - 10:00-11:50**

**Panel 17 Cracking Codes: From Computers to Purchasing Decisions**

Moderator: Jim Cubit

10:20-10:40 Evan Piermont  
*Discounting and Utility: Systematic Changes in Willingness to Pay as a Response to Changes in Price*

**Panel 18 Sexuality and Gender**

Moderator: Linda Horwitz

10:50-11:10 Elliot Luke  
*Who is Don Draper?: Masculinity, Television and "Mad Men"*

11:10-11:30 Joao Pedro Gomes  
*Queer Expressions: Telling Autobiographical Stories*

11:30-11:50 Liz Pimper  
*Male-to-Female Transgender Identity Within the Context of Feminism*

**Afternoon Session – 2:00-3:10**

**Panel 19 Global Relations, Teaching and Microfinance**

Moderator: Fatima Imam

2:00-2:30 Farzeen Tariq  
*Relationship between Pakistan and U.S.A.*

2:30-2:50 Angela Lopez  
*Teaching About the World, 42 Minutes at a Time*

2:50-3:10 Deepika Ramachandran  
*Informal and Formal Microfinance Activities in India*

**AIKIDO DEMONSTRATION**

**MOHR CAFETERIA**

**12:30-1:00** Alyssa Ritchie                      Lauren Skibiski  
Ben Tyler                                      Caroline Walters  
Colin Willis

**ROOT BEER FLOATS**

**2:00-3:00 P.M.**

**MOHR STUDENT CENTER  
OUTSIDE PIERSON ROOMS**



## Student Art Exhibitors

Demi Andersen  
Jesse Armstrong  
Taylor Ball  
Sara Bennett  
Danielle Bodenheimer  
Tara Busse  
Camila Quinteros Casaverde  
Justine Cheng  
Sylwia Dakowicz  
Alexandra Dober  
Marie Dohrs  
Kathryn Duncan  
Michael Grady Dunn  
Brian Elmer  
Chandler Foster  
Tanya Gascoigne  
Bianca Greene  
Sarah Guest  
Timothy Gruzowski  
Kelly Haberstroh  
Leslie Harshey  
Cleo Hehn  
Niharika Jain  
Dhruv Kochhar

Sarah Lendy  
Tzi-Ching Lin  
Jennifer Lindblom  
Na Liu  
Janet Lopez  
Kate Lundberg  
Anna McCloskey  
Katie McLain  
Stephanie Morales  
Sarah Navarro  
Fallynn Orusa  
Katherine O'Truk  
Molly Pedersen  
Simone Perry  
Caitlyn Pickens  
Katlin Sandvik  
Marina Shniper  
Lauren Skibiski  
Hilary Spector  
Giang Than  
Alie Urbanik  
Samme Van Kollenberg  
Nathanial Wang  
Carly White

## POSTER PRESENTATIONS

**3:00-4:00 P.M.**

### **CALVIN DURAND HALL**

Pascal Accoh

*Cannabinoid Receptor Activation during Adolescence Prevents Inhibitory Interneuron Development in the Prefrontal Cortex*

Mario Baldassari

Gillian Knight

*Distinctive Encoding, Cue Congruence, & Collaborative Memory*

Kristen Braun

*The Effects of Amphetamine on the Basolateral Amygdala and Prefrontal Cortex of Socially Isolated Lab Rats*

Scott Coleman

*Land Subsidence in Coastal Louisiana*

Sylwia Dakowicz

*Searching for a Telomerase RNA Gene in Silico*

Jonathan Flaksman  
*Identification of Dopaminergic Neuron Mutations in Worms with a Calcium Indicator*

Kristina Johnson  
*Retrieval of Context-Drug Memories Increases the Proportion of Recently Activated Neurons of the Hippocampus and Amygdala in Rats*

Alina Konnikova  
*Evaluating the Genetic Link between Autophagy and Parkinson's Disease in Yeasts*

Natalie Kukulka  
*Deciphering Parkinson's: Are Multiple Mutants Worse Than One?*

Julian McLain  
*Examination of Substitution Effects on Specific Sonogashira Coupling Reactions*

Menzi Mhlanga  
*Investigating the Role of the Androgenic Hormone Testosterone on Risk-Taking Behavior in Sprague-Dawley Rats*

Alyssa Parr  
*Does Aromatherapy Affect Brain Waves & Reaction Time?*

Ashley Reich  
*Biogenesis of Non-Canonical microRNAs*

Gilbert Reynders  
*New Technologies, New Synthetic Methods*

Saajidha Rizvydeen  
*A Novel Telomere-Anchored PCR Approach to Measure Telomeres*

Madhavi Senagolage  
*Genetic Support for Endocytosis as Degradation Route for Alpha-Synuclein, the Parkinson's Disease Protein*

Keith Solvang  
*Parkinson's Disease-Associated Post-Translational Modification Analysis of the Protein A-Synuclein*

Lynn Switaj  
Anneliese Szutenbach  
*The Search for Mutant Alleles in the Model Organism C. Elegans*

Nadia Vinogradova  
*Chiral Catalysis: Shortcut through the Looking Glass*

Natalia Wilkins  
*Web-based Pictorial Guide for the Ants of Illinois*

Maria Zawadowicz  
*Development of a New Method for Measurement of Hazardous Pollutants in Air*

**PARTICIPANTS AND ABSTRACTS**  
(Coauthored and Group Projects at the End)

*These are arranged alphabetically by student last name, followed by presentations involving more than one student, arranged by first student's last name alphabetically within presentation.*

*Group project leaders are indicated by an asterisk.*

**Pascal Accoh** '12, Biology; Chicago, IL

*Cannabinoid Receptor Activation during Adolescence Prevents Inhibitory Interneuron Development in the Prefrontal Cortex*

Recent findings indicate that cannabis (marijuana) use during adolescence is associated with an increased risk for schizophrenia. Decreased levels of GABA interneurons have been observed in the prefrontal cortex of schizophrenic patients. These GABA interneurons express the protein parvalbumin (PV). Hypothetically the activation of the endocannabinoid receptor CB1 during adolescence could alter the developmental maturation of these GABA interneurons. Repeated administration of an CB1 agonist, WIN, on interneuron function during adolescence, but not during adulthood, specifically prevented the normal developmental enhancement of prefrontal PV-immunoreactivity. This developmental disruption may contribute to an increased risk for psychiatric disorder. This research was performed in Dr. Kuei-Yuan Tseng's Laboratory at Rosalind Franklin University of Medicine and Science.

*Faculty Sponsor: Shubhik DebBurman*

**Tasheka Aikman** '11, Economics, Mathematics

*Why has Jamaica Failed to Achieve Sustainable Growth? An Empirical Study Measuring the Impact of Various Socio-Economic Factors in a Developing Nation*

*Jamaica, a small island with a population of 2,825,928 people, has the third largest murder rate per capita in the world and is classified as a developing nation. These high crime rates, along with the country's poverty, are contributing factors that inhibit the country from achieving positive economic growth. The purpose of this study is to determine what role debt, crime, climate and natural disasters play in Jamaica's inability to achieve sustainable growth. There has been little work done on Jamaican economic growth, and this paper aims to fill that void.*

*Faculty Sponsor: Amanda Felkey*

**Karla I. Avila-Peregrina** '11, Biology, Philosophy; Lindenhurst, IL

*Is Free Will An Illusion?*

The possibility of free will is one of the most contested philosophical issues and has gained much popularity in academic subjects outside of philosophy. However dubious it may seem I argue that free will is merely an illusion, albeit a necessary and useful illusion. Hard incompatibility posits that free will is incompatible with any notion of determinism or indeterminism, and furthermore, there is reason to believe that in scientific literature it is superfluous. Subsequent research explores the possibility that an illusion of free will is an evolved trait necessary for human social structure and therefore maintained.

*Faculty Sponsors: Anne Houde and Chad McCracken*

**Mario Baldassari '11, Psychology**  
*Understanding Lake Forest College's Flow of Information*

Two of Lake Forest College's main points of pride are its small size and the relationships and communication among students, faculty, and staff members created therein. But how well do we really communicate as a community? Despite the long-term shift at the College toward more inclusion of student voices in decision-making processes, students are still faced with a system that strongly favors top-down information flow. This presentation will highlight the research that led to two college-specific, sustainable ways to attempt to bridge the gaps in communication.

*Faculty Sponsor: Susan Long*

**Mario Baldassari '11, Psychology**  
*Mnemonic Effects of Humor in Speeches*

People often suggest leading (or ending) with a joke to enhance speeches. If these suggestions are true, then using a joke should enhance memory compared to a non-joke situation. However, distinctive information sometimes negatively affects memory for immediately surrounding information because of distraction. This thesis project specifically investigated the effects of using a joke and the location of the joke within a speech. In Experiment 1, participants heard two passages; one began with a humorous limerick and the other with a non-humorous one. In Experiment 2, the limericks were presented at the end of the passages. Findings will be presented.

*Faculty Sponsor: Matthew Kelley*

**Thomas Bark '12, History, Philosophy**  
*Does the Language We Speak Shape the Way We Think?*

To what extent does the language we speak influence our thoughts and perceptions of the world around us? The discovery of languages such as Guugu Yimithirr reshaped the fundamental philosophy and psychology of linguistic analysis – for it and others like it showed that languages can exist perfectly fine without concepts that had previously been considered universal building blocks of spatial thought. In my paper I make a case for a casual relation between language and thought by showing that habits of speech – instilled from an early age – can create habits of mind that affect not just speech but orientation skills and even patterns of memory.

*Faculty Sponsor: Steve Tammelleo*

**Kristen Braun '12, Chemistry; Millstadt, IL**  
*The Effects of Amphetamine on the Basolateral Amygdala and Prefrontal Cortex of Socially Isolated Lab Rats*

Amphetamine is a recreational drug that elevates mood, whose abuse rate is higher among adolescents who experience inadequate social support or developmental disruption. We test the hypothesis that social perturbations during adolescence lead to enhanced responsiveness to amphetamine of the amygdala and the prefrontal cortex, a brain region interconnected with the amygdala, and associated with decision making and mood regulation. Preliminary results indicate that amphetamine may disrupt the connectivity between the prefrontal cortex and amygdala in socially isolated rats. Developmental disruptions, therefore, may increase susceptibility to impairments caused by amphetamine via disruption of cortico-amygdala systems.

*Faculty Sponsor: Shubhik DebBurman*

**Scott Coleman** '11, Environmental Studies, Politics  
*Land Subsidence in Coastal Louisiana*

Land loss in Coastal Louisiana threatens the Cajun way of life as well as a major port system, oil and natural gas infrastructure and thus the whole state. This report reviewed a number of sources including geological papers, first-person accounts, and statistical data. Subsidence in Louisiana is due to a natural predisposition to land loss because of its geological character, as well as the interaction of human industry and other activities in the region. The combination of these precarious circumstances has caused much devastation to Cajuns, oil and gas interests, and the country as a whole.

*Faculty Sponsor: Glenn Adelson*

**David Curie** '13, Physics; Barrington, IL  
*Electron Molecule Collisions*

When gas molecules emit energy they frequently do so in the form of light. Understanding the unique spectrum of light emitted by the excited molecules gives insight into the corresponding energy levels of the molecules. We compared room-temperature samples to cold samples of nitrogen gas ions. Cold samples are of special interest because they have reduced populations in the vibration and rotational energy levels. Specifically, we are trying to calculate the density of the gas in the cold molecular beam as a function of time and position, as well as measure the temperature of these super cooled gas molecules.

*Faculty Sponsor: Scott Schappe*

**Alex Czarnecki** '13, Psychology; South Bend, IN  
*Soothing the Fighting Irish: Barack Obama's 2009 Commencement Address at the University of Notre Dame*

President Barack Obama was invited to give the commencement address at the University of Notre Dame in May 2009. After his acceptance, protests broke out across the campus and in the surrounding city. Controversy surrounded the selection of a pro-choice speaker to give an address at a Catholic, pro-life school. Many people forgot the importance of having the nation's leader come and speak to the graduates amidst the surrounding chaos. By subjecting the speech to rhetorical analysis, this paper explores how Obama was able to connect with the graduates and the broader Catholic community. This analysis includes an exploration of ideology (Michael McGee's "ideograph"), context (Lloyd Bitzer's "rhetorical situation") and dramatic theory (Kenneth Burke's "pentad").

*Faculty Sponsor: Elizabeth Benacka*

**Sylwia Dakowicz**, Biology  
*Searching for a Telomerase RNA Gene in Silico*

I have been using bioinformatics to search the genomes of fungi such as *Aspergillus oryzae*, and *A. nidulans* for a telomerase RNA gene sequence. No such gene has been found in any filamentous fungi, yet this gene is essential for life as it provides the template for telomere synthesis. Our lab has been focusing on sequences found in *A. oryzae* since this organism has an unusually long 12 bp telomere sequence instead of the short 6 bp sequence found in humans and *A. nidulans*. These extra nucleotides enable 100-fold fewer sequences that we need to closely examine. Nonetheless, since we ultimately wish to identify a sequence in *A. nidulans*, the quest now is to find synteny.

*Faculty Sponsor: Karen Kirk*

**Jonathan Flaksman**, Biology

*Identification of Dopaminergic Neuron Mutations in Worms with a Calcium Indicator*

Dopamine is a major neurotransmitter found in animals that helps execute voluntary movement. In order to better understand this function, our lab uses a nematode worm as a model organism. We hypothesized that performing chemical mutagenesis on these worms will create new mutations that will increase calcium levels in dopaminergic neurons when compared to wild type (WT) worms. Fluorescence assays revealed eight such mutants that exhibited higher calcium activity. In the future, single nucleotide polymorphism mapping will be performed to identify mutated genes. This research was performed at Dr. Hongkyung Kim's Laboratory at Rosalind Franklin University of Medicine and Science.

*Faculty Sponsor: Shubhik DebBurman*

**Ryann Freeman '11**, Psychology; Northfield, MN

*Neurophysiological Dimensions of Adult Attachment*

Attachment processes have been an important topic in the psychology of human development, ranging from studying infant attachment styles to understanding the ways in which attachment influences how adults are likely to act and react in relationships. My thesis studies the neurophysiological dimensions of adult attachment, adding to the small literature on this topic. The questions this thesis aims to answer revolve around the generalized and asymmetric aspects of brain wave response to emotion, and to the ways that adult attachment style may influence these responses. Participants' (29) brain waves were recorded while viewing both neutral-emotion and emotion-evoking video clips.

*Faculty Sponsor: Kathryn Dohrmann*

**Laura Frye '12**, International Relations, Sociology & Anthropology; Tuscola, IL

*Writing a Trilingual Children's Book in the Bolivian Highlands*

While studying in Cochabamba, Bolivia during the fall of 2010, I conducted a month-long independent research project that resulted in a children's book. I collaborated with Wilma, a young indigenous woman in the Universidad Mayor de San Simón, to write her true life's story. My book focuses on why she chose to get a higher education and why she has chosen to continue to wear her indigenous clothing, which is very uncommon in universities in Bolivia. It is written in Spanish, English, and Quechua, which is Wilma's native language. The illustrations are actual photographs of Wilma and her family.

*Faculty Sponsor: James Marquardt*

**Kaylyn Gasparotto '11**, Biology, Environmental Studies; Glen Ellyn, IL

*Diurnal Roosting Behavior Of The White Tent-making Bat *Ectophylla Alba* (Cilropetera: Phyllostomidae) In Costa Rica*

I aim to describe the behavior of white tent-making bats during their diurnal roosting period. The bats do not sleep for more than a few hours at once. Activity levels fluctuate throughout the day and higher activity levels are associated with higher ambient temperatures. This may be due to the bats undergoing torpor in order to conserve energy. Wind gusts frequently disturb their leaf roost and activity levels increase with increasing wind disturbance. Disruption of torpor by wind may be a disadvantage of roosting in leaves.

*Faculty Sponsor: Anne Houde*

**Max Glassburg '11**, English

*Mock Thesis: The Epic*

I am writing a mock epic utilizing the Spenserian stanza, following in the footsteps of other poets, namely Lord Byron, who used this form for satirical purposes in narrative poetry. My tale follows three poets, Ezra Pound, Francesco Petrarca and Hank Williams as they encounter numerous "literary obstacles" and stretches of wilderness on their way to find and rescue Emily Dickinson, who has mysteriously disappeared from the mythical small community of dead poets. My goal is to advocate a concrete narrative structure in poetics that I think has been lost in the light of "experimental" poetic methods, attachments to "schools of thought" and various criticisms that, while serving a particular scholarly purpose, detract from the actual creation of poetry. The story is intended to be entertaining, as well, so those who are not interested in or familiar with literary criticism/tradition may enjoy themselves.

*Faculty Sponsor: Robert Archambeau*

**Joao Pedro Gomes '13**, Communication

*Queer Expressions: Telling Autobiographical Stories*

I intend to screen a queer documentary of my own, presenting its influences on queer theory and its similarities with documentaries such as "It Wasn't Love" by Sadie Benning. I will situate the documentary within the queer culture, demonstrating its resistance to conventional gender and sexual roles. The autobiographical documentary will challenge a disciplinary heterosexual coherence, perpetuating non-normative sexual and gender identities. I will reject the binary frame of gender and rethink the human body and its definition. I will promote a unique symposium experience by presenting my art project, discussing it, celebrating the field of queer critical theory.

*Faculty Sponsor: Devorah Heitner*

**Ian Gonfinete '12**, International Relations; Jundiai, Brazil

*Baby Blue Tuesdays - Understanding Synesthesia*

My presentation will be about synesthesia, the rare neurological condition that joins senses (e.g., a sound will evoke a color/smell/touch; letters and numbers have colors, etc.). I will explain how the different types of synesthesia work, the neurological theories about what causes it, how synesthesia appears to increase the memory and creativity of those with the condition, and the empirical evidence that supports the innate versus learned origin of this sensory phenomenon. I will draw examples from my own experience with synesthesia and do a simple test to see if there are people in the audience with grapheme-color synesthesia.

*Faculty Sponsor: Sergio Guglielmi*

**Cleo Hehn '13**, Studio Art; Portland, OR

*The Fallen Woman and the Fall of Society*

In this presentation, I analyze Victorian attitudes toward women's sexuality, represented in five key paintings. While the women in Richard Redgrave's "The Outcast" (1851) and Augustus Egg's "Past and Present" (1858) must be cast out because of their sexual sins, the woman in William Holman Hunt's "The Awakening Conscience" (1853) repents and is redeemed. The women in Dante Gabriel Rossetti's "Found" (1853) and Ford Madox Brown's "Take Your Son, Sir" (1851), however, are not blamed for their sins. While most attributed the corruption and fall of society to these "fallen" women, the latter paintings reflect sympathy with their lives.

*Faculty Sponsor: Ann Roberts*

**Paul Henne '11**, English, Philosophy; Southbury, CT  
*Fictional Discourse and Fictitious Entities*

It seems odd to suggest that the statement, "Hamlet is a prince of Denmark," is false. Nonetheless, we know that *Hamlet* is a fictional play and that Hamlet is in no way an actual person. How can we make true statements about fictional entities? Are there such things as "fictional facts"? In this talk, I argue that cognitive statements about fictional entities refer—and are made true or false—in exactly the same way as cognitive statements about actual entities. This version of fictionalism requires that fictional entities have some sort of ontological status, a price I am prepared to pay.

*Faculty Sponsor: Chad McCracken*

**Katie Howson '11**, Politics, Theater  
*Executive Power and the Courts*

Presidential signing statements have been used by presidential administrations in the United States for well over a century. They have taken many forms and have greatly expanded the power of the executive branch of the national government. With any large expansion of the power of government, however, the question that immediately follows is this: What is the effect of signing statements on civil liberties? My thesis examines the relevant legal implications for the expansion of executive power through Presidential signing statements and, based on the makeup of our current legal system today, what protection the courts can offer for the protection of civil liberties.

*Faculty Sponsor: James Marquardt*

**Eemeli Isoaho '11**, International Relations, Sociology & Anthropology  
*From the Margin to Mainstream: Empowerment of Bolivian Indigenous Groups During the Government of Evo Morales*

After taking office in 2006, Evo Morales, the first indigenous president of Bolivia, embarked on the challenge to empower the country's historically marginalized native groups. In my symposium talk, I will present the findings of my senior thesis that evaluates the successes and shortcomings of Morales's administration. More specifically, I will identify important economic, political, and sociocultural changes that have occurred in the situation of indigenous peoples over the past five years. Finally, I will take a brief look at the future of Bolivian native groups and present my policy suggestions for Morales's next term.

*Faculty Sponsor: Holly Swyers*

**Jocelyn Jaramillo '11**, Psychology; Tonalico, Mexico  
*Predictors and Moderators of English Language Learners' Willingness to Speak English*

In the U.S., immigrants are expected to learn English. At the same time, non-native accents are stigmatized. This discourages some immigrants from speaking English, which then hinders English acquisition. Why do some immigrants persist while others remain silent? Differences in willingness to speak English could be moderated by two personality variables: language self-efficacy (LSE) and implicit theories of the self (ITS). Hispanic immigrants and children of immigrants are the focus of this study. Those who report high levels of LSE and a malleable ITS are expected to be more willing to speak English, which could result in better English proficiency.

*Faculty Sponsor: Nancy Brekke*



**Syndhia Javier '11**, Sociology & Anthropology; New York, NY  
*Lake Forest's Black History: A Glimpse into the Past*

In the late 19th century, an African-American community established itself in Lake Forest on what is now south campus. Little is actually known about the particulars of this community, and my senior project is dedicated to gathering a strong foundation of knowledge of who these people were, what they did, and where they live now. I am working to memorialize the experiences and the impact of the community so that it does not fade from history. This presentation will focus on Samuel Dent, the Casselberry family, and the AME church that once was the center of Lake Forest's black history.

*Faculty Sponsor: Holly Swyers*

**Kristina Johnson '11**, Neuroscience, Psychology; Sheridan, IL  
*Retrieval of Context-Drug Memories Increases the Proportion of Recently Activated Neurons of the Hippocampus and Amygdala in Rats*

Drug relapse is believed to be related to memories of the environment the drug was taken in. Whether blocking these memories can prevent relapse is unknown. The areas involved in the retrieval need to be found first. Rats were place conditioned with amphetamine and then re-exposed. At this time, measurements of recent activity using immunohistochemistry and laser scanning confocal microscopy were taken in the hippocampus and amygdala. A proportional increase is predicted in these areas but the analysis is still ongoing. If results yield what is expected, then blocking memory retrieval in these areas may decrease drug relapse. This project was conducted in Dr. David Rademacher's laboratory (Rosalind Franklin University of Medicine and Science).

*Faculty Sponsor: Shubhik DebBurman*

**Courtney King '13**  
*African-American Influence in Lake Forest*

This slideshow details the influence of African-Americans on the city of Lake Forest, IL. This brief history starts with Lake Forest being a site of the Underground Railroad. The history progresses into the state of African-Americans in Lake Forest today, including alumni and current students of Lake Forest College.

*Faculty Sponsor: Arthur Miller*

**Alina Konnikova '11**, Biology; Vernon Hills, IL  
*Evaluating the Genetic Link Between Autophagy and Parkinson's Disease in Yeasts*

Parkinson's disease is an incurable neurodegenerative disease characterized by the death of midbrain dopaminergic neurons. The suspected cause of PD is the misfolding and aggregation of a protein  $\alpha$ -synuclein. A popular hypothesis is that increasing degradation of  $\alpha$ -synuclein may protect the cell from aggregation and toxicity. While strong pharmacological evidence indicates autophagy is involved in degradation of alpha-synuclein in PD, the genetic link remains unclear. I evaluated this genetic link for my senior thesis and my data so far shows that compromised autophagy in a budding yeast model results in altered localization and expression of  $\alpha$ -synuclein, but does not significantly worsen toxicity.

*Faculty Sponsor: Shubhik DebBurman*

**Natalie Kukulka '13**, Neuroscience; Glenview, IL  
*Deciphering Parkinson's: Are Multiple Mutants Worse Than One?*

Genetic mutations cause 10% of Parkinson's disease (PD) cases. The best-studied gene is alpha-synuclein and its three PD-causing mutations alter three different amino acids, which are the building blocks that

comprise the protein. Additionally, each mutant affects alpha-synuclein's properties in a distinct way indicating each building block's strategic importance. What we do not know is whether these three building blocks act independently or work together making the protein toxic to cells. My Richter research focused on evaluating the deleterious effects of combining these mutants in Fission and Budding Yeast, model organisms for Parkinson's disease developed in the DebBurman lab. The two yeast models allow me to analyze the changes in how alpha-synuclein localizes, accumulates and alters cell growth, in two organisms.

*Faculty Sponsor: Shubhik DebBurman*

**Jennifer Kurtz '12**, Chemistry, Environmental Studies; Park Ridge, IL

*Nationalism in the Media: Perspectives of the 2010 BP Oil Spill in the US and UK media*

The 2010 blowout in the Gulf of Mexico caused the worst environmental disaster the US has ever faced. Or did it? The American media would surely agree with the statement above, but the British media reported another side to this story. Although the US and UK media venues were covering the same events, they portrayed them from very different perspectives leaving the readers with an impression of the spill based on the respective media's sway. This presentation examines the US and UK nationalistic media bias by analyzing articles and images published in major media venues in the US and UK.

*Faculty Sponsor: Jeffrey Sundberg*

**Karen Larson '11**, English

*The So-Called Collapse of the Maya Civilization*

This website is the final project for an independent study on the collapse of the Maya civilization and ongoing anthropological debates about the facts, possibilities, theoretical features, or characters of collapse in which the culture history of the classical Maya often plays a central role. In addition, this project draws parallels between classic Maya society and our own, providing the reader with insight to the significance of our society's decisions made during its defining moments. And what if our society was on its way to collapse? Could we stop it? And if not, what would we leave behind?

*Faculty Sponsor: Alexander Mawyer*

**Karen Larson '11**, English; Lakewood, CO

*H/e/a/r/e*

This play presents the similarity of people's experiences, thoughts, and emotions despite the differences of character, content and circumstance. Actors maintain a just-audible buzz throughout the play, over which main lines "pop out," sometimes singularly, sometimes in conjunction with others. This project was influenced by the idea of the rhizome, first proposed by Deleuze and Guattari—that from one point, there are so many possibilities and yet, together, all the points form one thing. It is singularity and multiplicity existing simultaneously. This play challenges audiences to see beyond people's differences and to see the humanity that lies somewhere underneath.

*Faculty Sponsor: Davis Schneiderman*

**Collin Lever '11**, Politics

*Islam and the State: Function Rather than Feature*

Islam and politics are inextricably connected. Islam does not supersede state policies and interests; it sustains them. Throughout its history, Islam has served as a functional component of the state in legitimating rulers and the consolidation of power, encouraging and justifying expansion and disguising secular, modernizing reforms. Additionally, especially in Arab states, the many pre-Islamic cultural elements reflected in Islamic traditions also fill similar roles. With the advent of the modern nation

state, Islam serves the functions listed above, as well as providing a national and regional identity. While the religious component remains a *raison d'etat* of the pragmatic and rational state, it does not represent an essential character and *raison d'etre*. For this reason, the Islamic state, and the greater Middle East in general, should be viewed as a rational actor in the same vein as its Western counterparts.

*Faculty Sponsor: James Marquardt*

**Jennifer Lindblom '11**, Art History, French; Plymouth, MN

*Howard Van Doren Shaw's Ragdale: Preserving American Arts and Crafts*

The summer home of architect Howard Van Doren Shaw embodies the arts and crafts ideals of John Ruskin and William Morris. During the rapid urbanization and industrialization of the late 19th century, Shaw built an idyllic country estate for his family away from the filth and squalor of Chicago. The utilitarian yet fanciful space was an inspiration for creative endeavors of three generations of Shaws. Preservation of post-Shaw Ragdale involves many groups; the goal is to strike a balance between the legacy of the Shaw family, retaining historic significance, and serving the residents and community members.

*Faculty Sponsor: Ann Roberts*

**Aimee Lockwood '11**

*Sports and Academics: The Effects of Delayed Gratification*

This research looks into a common stereotype suggesting that athletes obtain worse grades than non-athletes and offers a suggestion as to why athletes' grades may not be up to par. Typical athletes have been culturally conditioned to seek instant gratifications (such as winning a game, running the fastest time, or having fun with teammates) that the classroom seems to not offer them. The results of my research imply that reward structures figure prominently into the relative discipline and drive of student-athletes and are worth examining in relation to the academic success of athletes.

*Faculty Sponsor: Holly Swyers*

**Angela Lopez '11**, Education, Spanish

*Teaching About the World, 42 Minutes at a Time*

This presentation showcases and deconstructs the culminating project of a secondary-education major. It highlights the complex thought processes that go into each decision made to manage classroom behavior and meet standards, while still engaging and inspiring students. While presenting a mixture of curriculum design techniques and personal experiences, this talk will be a fun and educational experience for anyone who's ever wondered why teachers do what they do.

*Faculty Sponsor: Rachel Ragland*

**Elliot Luke '11**, Communication, French; Littleton, CO

*Who is Don Draper?: Masculinity, Television and "Mad Men"*

For almost 20 years, scholars and social critics have written of a "crisis in masculinity." What precipitated this supposed crisis? Where can this crisis be found in modern culture? This presentation explores these questions through a study of masculinity in the AMC television series *Mad Men*. Furthermore, it asserts that *Mad Men* actively debunks the male ideal by depicting masculine identity crisis as central to, and as an inevitable eventuality of, its attempted performance.

*Faculty Sponsor: Linda Horwitz*

**Erin McGinley '11**, Sociology & Anthropology; Lakemoor, IL  
*Love or Money: Who Owns Falmouth, Jamaica?*

Falmouth, Jamaica was founded as a booming port town importing iron, food and slaves and exporting sugar and dyes supplied by vast plantations owned by British colonial families. After emancipation the port activity slowed and eventually ceased and the town was in many ways frozen in time. In 2011 a newly-dredged cruise ship port is to open in Falmouth, and once again the town will welcome large vessels. This paper examines the impact of the port on the town of Falmouth and the power structures that define the relationships of those vested interests in Falmouth.

*Faculty Sponsor: Holly Swyers*

**Julian McLain, '11**

*Examination of Substitution Effects on Specific Sonogashira Coupling Reactions*

The Sonogashira reaction is an important Palladium catalyzed coupling reaction used extensively in modern chemical synthesis. In this study ethynylamines are coupled with an aromatic system containing a nitrogen substituent. However, this coupling becomes problematic with nitrogen substituents placed in various positions in the reactant molecules. This study involves varying the type of aromatic nitrogen substituents and selecting various blocking groups for use with the ethynylamines; along with these substituent variations many other reaction parameters have to be examined for reaction optimization. Some success has already been achieved toward understanding the complex nature of this important coupling reaction.

*Faculty Sponsor: William Martin*

**Katie McLain '11**, English

*Semper Gumby: A Memoir of a Military Girlfriend*

I plan to read several short excerpts from my creative nonfiction thesis, which takes the form of a memoir. The memoir, which is written in a series of short chapters, follows my experiences with dating a member of the military, my experiences in dealing with a diagnosed anxiety disorder, and how the two affect each other. In addition to my personal experiences, the thesis also brings up topics related to the memoir genre, such as fictionalization's place in a work of nonfiction, and whether or not a college student has the "right" to create a memoir.

*Faculty Sponsor: Tracy McCabe*

**Menzi Mhlanga '11**, Neuroscience, Psychology; Mbabane, Swaziland

*Investigating the Role of the Androgenic Hormone Testosterone on Risk-Taking Behavior in Sprague-Dawley Rats*

Testosterone plays a critical role in the development of gender and gender-specific traits. Whereas the physiological effects of testosterone are well established, the hormone's influence on higher-order functions such as cognition and behavior are poorly understood. Recent evidence suggests that testosterone increases sensation seeking, aggression, and mate-seeking behavior: behaviors with a risk component. More recent findings suggest a strong link between testosterone and financial risk-taking behavior. However, the causal relationship between testosterone and risk-taking behavior has yet to be determined. Here we hypothesize that short-term treatment with testosterone in Sprague Dawley rats increases the probability of risk-taking behavior.

*Faculty Sponsor: Robert Glassman*

**Annalise Parks '12**, Communication, French, Politics

*When the Tricolore Bleeds Over: The Appreciation for French Culture in Francophone Countries and Regions*

I would like to discuss the appreciation for French culture within Francophone countries and regions outside of Europe such as Morocco, Martinique and parts of Canada. As a self-proclaimed Francophile after many classes and time abroad, I have a pretty comprehensive understanding of the matter, but I will also be completing plenty of research and conducting interviews with citizens of each my target areas, as well as Frenchmen on what they understand of their perceived image and contribution to universal culture.

*Faculty Sponsor: Cynthia Hahn*

**Alyssa Parr '13**, Psychology; Chanhassen, MN

*Does Aromatherapy Affect Brain Waves & Reaction Time?*

Do smells affect how we feel? Could aromas even impact our brain waves and working memory? In this experiment subjects were asked to perform 3 visual-choice reaction-time tests differing in difficulty in a room filled with the relaxing scent of lavender, the energizing scent of citrus, or no aroma. Brain waves and reaction time were compared for each condition. When results were analyzed no clear difference was observed in the brain waves in relation to the different odors. However, we did find a trend of slower average reaction times in the aroma conditions compared to the control (no aroma) condition. Lastly, when comparing the difficulty of the reaction time tests we found that as the difficulty increased, more theta (or thinking) waves were observed.

*Faculty Sponsor: Robert Glassman*

**Caitlyn Pickens '11**, Mathematics; Grayslake, IL

*A Study of Modern Cryptography: RSA and the Quadratic Sieve*

This project explores the modern cryptographic cipher RSA and ways to attack the system. The methodology of public key encryption is discussed. Approaches for cracking the system, specifically the Quadratic Sieve (QS) and the Number Field Sieve (NFS), are then presented. The QS is implemented in Wolfram's Mathematica as a demonstration. Lastly, the future of RSA in the face of quantum computing is discussed.

*Faculty Sponsor: David Yuen*

**Evan Piermont '11**, Economics

*Discounting and Utility: Systematic Changes in Willingness to Pay as a Response to Changes in Price*

This paper examines how consumers may base the valuation of a commodity (at least in part) on the price of the good. Formally, this is represented by making the willingness to pay (WTP) for a good a function of its price. This paper adds to conventional economic theory by explaining why consumers may alter their valuations in response to price changes, particularly in circumstances when the price of a good changes and the consumer is aware of the price change (for example, retail discounts). The paper develops three models to explain the consumer's valuation of a good: updating, anchoring, and savings utility, and represents them formally and details how changes in the price and the preferences of the consumer (such as desire to save money, and perceived correlation between price and quality) will affect the valuation of potential purchases, and hence the decision about whether or not to buy. To test which models most accurately represent consumer behavior, I ran a classroom experiment to test the validity of each. In addition to experimental data, this paper also analyzes store-level market data to

understand how consumers decide to make purchases. Overall, this paper will help to explain patterns of consumer behavior that would be considered anomalous by traditional theory.

*Faculty Sponsor: Amanda Felkey*

**Liz Pimper '11**, Philosophy, Politics

*Male-to-Female Transgender Identity Within the Context of Feminism*

Ideologically and fundamentally, the male-to-female transgender community and the feminist community—although not identical—have significant overlap such that respect, cooperation, and alliance ought to be realized; however, efforts to politically and socially unite the two groups have met significant resistance. Framed around the justifications and ramifications of the "womyn-born-womyn only" entrance policy that governs the Michigan Womyn's Music Festival, this paper examines the complicated issue of an evolving female identity in a patriarchal society.

*Faculty Sponsor: Steve Tammelleo*

**Deepika Ramachandran '11**, Economics, International Relations

*Informal and Formal Microfinance Activities in India*

With more than 3 billion people living on \$2 or less a day, financial services are vital to eradicate poverty. In most developing economies, banks and financial services are not available to the poor. As a result, an array of informal and formal microloan sources has surfaced to address concerns of poverty. In India, these include self-help groups (SHGs), rotating savings and credit association (RoSCAs), accumulating savings and credit associations (ASCAs), village savings and loan associations (VSLAs), credit unions and other credit cooperatives, NGO microfinance programs, and for-profit microfinance institutions.

*Faculty Sponsor: Les Dlabay*

**Ashley Reich '13**, Neuroscience; Huntsville, AK

*Biogenesis of Non-Canonical MicroRNAs*

MicroRNAs (miRNAs) play an important role in the regulation of gene expression. Canonical miRNAs are transcribed and then cleaved by the microprocessor complex into pre-miRNA. In some cases, splicing, rather than the microprocessor, generates a pre-miRNA. These microRNAs are known as mirtrons. To study the biogenesis, we expressed mirtrons in HEK-293T cells and analyzed splicing and miRNA abundance by reverse transcription PCR. We found that mirtron-1228 located within host gene LRP1 is neither splicing nor microprocessor dependent. These results suggest that a novel miRNA biogenesis pathway is involved in processing a subset of miRNAs.

*Faculty Sponsor: Shubhik DebBurman*

**Gilbert Reynders '11**, Chemistry

*New Technologies, New Synthetic Methods*

Ever wonder how scientists created the technology to make iPhones or solar cells? Materials for new technologies are often made from new synthetic methods used in research laboratories all over the world. Two never-before-seen compounds have recently been produced right here at Lake Forest College using an unusual recipe involving both inorganic and organic reagents. The combination has not always produced the desired results, but progress has been made in optimizing the reactions. This presentation will focus on the methods and rationale behind the syntheses of these new materials along with the unique properties of both compounds.

*Faculty Sponsor: Jason Cody*

**Saajidha Rizvydeen '12**, Biology; Chicago, IL

*A Novel Telomere-Anchored PCR Approach to Measure Telomeres*

Telomeres serve as the protective caps of linear chromosomes. Telomere length is often greater in germ cells than somatic cells of the same organism; however, little is known about germ cell telomere lengths in many organisms. In our lab we used the filamentous fungus, *Aspergillus nidulans*, to design an assay that would allow us to make accurate measurements of the telomeres in the relatively sparse meiotic cells. Our results indicate that the telomere lengths of germ cells are similar to somatic cells. These results indicate a very strict regulation of telomere length in this organism.

*Faculty Sponsor: Karen Kirk*

**Rachiny Samek '12**, Philosophy, Politics; Lansing, MI

*Asian Americans and Affirmative Action: The Need for a Reevaluation of Affirmative Action Policies*

This paper addresses the negative consequences of affirmative-action policies, largely focusing on the Asian-American community. Through most current affirmative-action policies, Asian Americans are viewed as a single, monolithic racial group. This determination glosses over the different economic and social cultures faced by different ethnicities within the Asian-American community. The paper concludes that affirmative-action policies need to address the various ethnicities within the racial designation of 'Asian American', and expands this argument to other broad racial categories such as Black, White, and Hispanic.

*Faculty Sponsor: Steve Tammelleo*

**Madhavi Senagolage '12**, Biology

*Genetic Support for Endocytosis as Degradation Route for Alpha-Synuclein, the Parkinson's Disease Protein*

Parkinson's disease is an incurable and neurodegenerative disease linked to the accumulation of  $\alpha$ -synuclein protein. The impaired degradation of  $\alpha$ -synuclein is thought to promote its aggregation and cell death. Therefore, accelerating the degradation of  $\alpha$ -synuclein is of therapeutic interest. We hypothesized that lysosome is a degradation site for  $\alpha$ -synuclein and the route to endocytosis. Specifically, we evaluated if three disease-related properties (subcellular localization, accumulation and cellular toxicity) of  $\alpha$ -synuclein changed in yeast strains when genes were eliminated that encode for seventeen proteins that control the endocytosis pathway. Our data suggested that most gene deletions altered at least one of the above properties related to pathology of  $\alpha$ -synuclein. Therefore, in both wildtype and familial mutant E46K  $\alpha$ -synuclein is degraded by the lysosome via the endocytosis route.

*Faculty Sponsor: Shubhik DebBurman*

**Ioana Sirca Belintan '11**, International Relations, Politics

*The Development of Civil Society in Post-Communist Romania*

Political theorists have always considered civil society to be a strong indicator for democracy and a positive political development. Civil society constitutes the ground for socio-political movements and political revolutions; it helps bring about changes and it is the guardian of individual rights and liberties. My thesis explores the development of civil society in the two decades following the Revolution of '89 in Romania. It attempts to put forward a comprehensive historical, socio-anthropological and political explanation for why concepts of civil society and civil responsibility remain underdeveloped in the political conscience of the populace and what needs to change in order for Romanian civil society to be able to fully absorb and institutionalize a liberal, democratic attitude.

*Faculty Sponsor: James Marquardt*

**Keith Solvang '11**, Biology; Plainfield, IL

*Parkinson's Disease-Associated Post-Translational Modification Analysis of the Protein A-Synuclein*

Parkinson's disease is an incurable neurodegenerative disease affecting nearly 4 million people worldwide. The disease is linked to three properties of the protein  $\alpha$ -synuclein: misfolding and aggregation, lipid interactions, and cellular toxicity. Knowledge about how basic cellular modifications can alter these three properties could help provide therapeutic approaches to this deadly disease. We evaluated changes in aggregation, toxicity, or accumulation by testing  $\alpha$ -synuclein mutants that block or mimic phosphorylation and nitration. Our data suggests that the inhibition of phosphorylation increased both toxicity and cytoplasmic localization of  $\alpha$ -synuclein. Additionally, depending on key amino acids, mimicking nitration increased cytoplasmic localization. Interestingly, both the inhibition and mimicry of nitration caused toxicity in specific situations.

*Faculty Sponsor: Shubhik DebBurman*

**Fabricio Sordoni '11**, Economics, International Relations; Santa Fe, Argentina

*China's Soft Power in Latin America: Implications for the Western Hemisphere*

The thesis analyzes the history and ongoing transformations in Sino-US-Latin American relations. Its central focus is China's increasing use of 'soft power' in Latin America and the implications of China's growing influence in Latin America on the region's geopolitics. The thesis considers two hypothetical outcomes of this triangular relationship. The first says relations going forward will be based on a new dependency model in which commercial exchanges result in China supplanting the United States as the region's dominant economic actor. The other expects a "win-win-win" framework of international trade, cooperation and development in which China, the U.S., and the countries of Latin America benefit. The thesis considers the implications of each scenario on the United States 'soft power' in Latin America.

*Faculty Sponsor: James Marquardt*

**Lauren Swafford**, Physics; Winchester, TN

*Pulsed NMR*

The goal of my research is to measure the effects of short pulses on nuclear magnetic resonance (NMR) signals, and to try to confirm the theoretical excitation probability recently predicted by Rostovtsev et al. (Phys. Rev. A, 79, 06833 (2009)). Because this is small effect, I am using the spin echo technique, which produces NMR signals significantly later in time than the large excitation pulses that could obscure the desired signal. Furthermore, I am characterizing and eliminating some sources of noise that interfere with the signal. My talk will present an overview of the project and some recent results.

*Faculty Sponsor: Michael Kash*

**Farzeen Tariq '13**, International Relations

*Relationship Between Pakistan and U.S.A*

The presentation will focus on major political events, which occurred between 1970 and 2011 and affected Pakistan and U.S relations. This presentation will bring attention to the role played by the media in manipulating Pakistan/U.S relations. To show the strength of the media's influence on the foreign affairs of Pakistan and U.S.A, archives from the *New York Times* and video clips from credible sources will be utilized.

*Faculty Sponsor: Fatima Imam*



**Andrew Van Herik** '11, English, Philosophy; Winnetka, IL  
*What's Wrong With Torture?*

There is wide agreement that there is something especially wrong with torture. U.S. and international law prohibit it. Images of it disturb us. But this special objectionableness requires examination. I argue that torture is a distinctive kind of immoral act, characterized by a continual, inescapable threat of essential pain. This continual threat of essential pain gives the torturer a pseudo-omnipotence that no human being ought to be able to wield. Through an exploration of the phenomenology of torture, and by comparing torture with the lesser but related evil of blackmail, I hope to illuminate the especially disquieting nature of torture.

*Faculty Sponsor: Chad McCracken*

**Nadia Vinogradova** '13 Chemistry, English; Moscow, Russia  
*Chiral Catalysis: Shortcut Through the Looking Glass*

Chiral molecules are identical in atoms and connectivity but appear as non-superimposable mirror images. Just as the right hand fits only in the right glove, a "right-handed" molecule will react specifically with "right-glove" molecules. Today, chiral catalysts are used to tailor the structure and properties of specialty plastics and pharmaceuticals at the molecular level. Metallocenes are chiral catalysts used in the manufacture of specialty plastics. Historically, synthesis of metallocenes makes a mixture of catalysts with varying chirality. Richard Jordan at The University of Chicago has developed a synthesis that, for some metallocenes, is specific for one "hand." In collaboration with Jordan, our computer modeling aims to make the synthesis general for all metallocenes.

*Faculty Sponsor: Dawn Wiser*

**Libby Wait** '11, Politics, Sociology and Anthropology; Chapel Hill, NC  
*"I'm in a New York state of mind": The Role of Place in Hip-Hop Music*

Hip-hop music – more so than other cultural forms – exhibits a powerful connection to, and awareness of, place. Hip-hop artists' consistent references to specific area codes, street intersections, and local crews, for example, demonstrate that place is a central theme in hip-hop music. In this presentation I treat place as a fundamental social and cultural force and investigate the various ways place is utilized in hip-hop music. Examining how place is discussed in hip-hop music in a socio-cultural context can provide insight into how humans construct notions of place and how the meanings we attach to places influence our social and cultural lives.

*Faculty Sponsor: Holly Swyers*

**Sarah White** '11, Economics, International Relations  
*Smart US Foreign Policy: Regaining International Credibility*

The United States dominates the world stage. How effectively it wields power in the years to come will have important implications at home and abroad. In the first decade of the 21st century, the United States has squandered its formidable power and reputation, and advanced international insecurity. But past is not necessarily prologue. The thesis studies Joseph Nye's concept of "smart power" and considers its relevance to leading theories of international relations. Its purpose is to propose a blueprint as to how the United States can regain legitimacy and credibility on the world stage in the form of a new foreign policy strategy that serves national interests and common interests of nations. The thesis applies this model to two major foreign policy challenges facing the United States: terrorism and the rise of China.

*Faculty Sponsor: James Marquardt*

**Natalia Wilkins '11**, Art, Biology  
*Web-based Pictorial Guide for the Ants of Illinois*

The correct identification of organisms is a critical component of biology. The most commonly used tool for identification of an unknown specimen is a dichotomous key. Dichotomous means divided into two parts. Therefore, a dichotomous key begins by presenting two general options. Each subsequent step leads to pairs of more specific characteristics, ultimately leading to the identification of the specimen. However, dichotomous keys are often difficult to use and are predominately written with specific scientific jargon. For experts in the field, this is not an issue, but for those who are beginning, it is a tedious and difficult experience. My goal is to create a website that presents a user-friendly, pictorial-based dichotomous key of the ant genera of Illinois.

*Faculty Sponsor: Sean Menke*

**Shabana Yusufshaq '12**, Biology, Education; Des Plaines, IL  
*Can Isolated Rats Read Social Cues?*

Social transmission, or the transfer of information from one conspecific to another, is thought to enhance response to environmental challenges. Such transfer of information has been noted in several species. In the summer of 2010 at Rosalind Franklin University, I was able to confirm that social transmission occurs in Sprague-Dawley rats. In my ongoing thesis research I have designed an experiment to determine if rats isolated after weaning will continue to exhibit social transmission. Specifically, I am testing the prediction that isolated rats will not receive information easily due to a deficit in being able to register social cues.

*Faculty Sponsor: Anne Houde*

**Maria Zawadowicz '12**, Chemistry, Physics; Wheeling, IL  
*Development of a New Method for Measurement of Hazardous Pollutants in Air*

Hazardous Air Pollutants (HAPs) are toxic chemicals, whose emissions are regulated by the EPA. Monitoring of HAP concentrations is useful in tracing air pollution, but methods used by national labs tend to be complex and expensive. In this study, polymer-coated fibers were used to selectively trap volatile chemicals from the air before laboratory analysis. Several sampling variables were optimized: extraction time, air velocity and temperature. Optimized sampling allowed us to achieve sensitivity comparable to the more complex equipment. This novel technique is simple enough to be used as a field laboratory component of undergraduate chemistry and environmental studies courses.

*Faculty Sponsor: Lori Del Negro*

**Pascal Accoh '12**, Biology; Chicago, IL

**Kayla Ahlstrand**

**Grant Alexander**, Kaohsinng, Taiwan

**Maria Basith**

**Iqra Bhati**

**Daniella Brutman**

**Katrina Campbell**

**Jessica Chin**

**Jessica Dudley**

**Paula Firmiss**

**Josh Forsman**

**Jonathan Galamis**

**Rabia Khan**

**Rida Khan**  
**Paulis Kuprys**  
**Brianna Lemond**  
**Laura Lepping**  
**Menzi Mhlanga '11**, Neuroscience, Psychology; Mbabane, Swaziland  
**Anna Naditz\***  
**Saajidha Rizvydeen '12**, Biology; Chicago, IL  
**Madhavi Senagolage '12**, Biology  
**Peter Sullivan**  
**Mira Trebilcock**  
**Ryan Vlaar**  
*Exploring Medical Mysteries of the Human Brain*

Students of BIO130 Deadly Shapes, Hostage Brains and BIO346 Molecular Neuroscience invite members of the college community to discover fascinating aspects of the function and dysfunction of our human nervous system. BIO346 mentors and BIO130 mentees collaborated in small groups to create multimedia exhibits that extend textbook knowledge to cutting-edge biomedical mysteries by integrating research poster presentations with human brain anatomy, physical models, hands-on activities, and cellular microscopy. The BIO130 exhibits focus on three neurodegenerative diseases (Lou Gehrig's, Parkinson's, and Prion diseases), while the BIO346 exhibits focus on plasticity, cognition/thought, emotions, sleep/wakefulness, language and speech.  
*Faculty Sponsor: Shubhik DebBurman*

**Mario Baldassari\* '11**, Psychology  
**Gillian Knight '11**  
*Distinctive Encoding, Cue Congruence, & Collaborative Memory*

A study conducted by Knight and Baldasari in Professor Kelley's lab was designed to test two competing theories of collaborative inhibition (CI)—reduction in group recall performance as compared to the combined, non-redundant, output of several individuals working alone. One experiment directly manipulated distinctive encoding (bizarre vs. common sentences) and retrieval cue congruence (shared vs. unshared) with a collaborative memory procedure. The experiment revealed patterns of performance that are difficult to explain and, in some cases, are counter to the predictions of both hypotheses. The poster to be presented was also shown at the annual meeting of the Psychonomic Society in November 2010.  
*Faculty Sponsor: Matthew Kelley*

<b>Salomon Barrera</b>	<b>Lani Leong</b>
<b>Prudencio Cabral</b>	<b>Jonas Mikolich</b>
<b>Sarai Cabrales</b>	<b>Allison Molloy</b>
<b>Maria Chiotis-Miehe</b>	<b>Mary Kate Nelson</b>
<b>Lisette Cortez</b>	<b>Lisa Pahomov</b>
<b>Matt Cunliffe</b>	<b>Lana Panitch</b>
<b>Alexis Czarnecki</b>	<b>Alejandrina Pareja</b>
<b>Stephen de Wolff</b>	<b>Stuart Pearlman</b>
<b>Jon Flaksman</b>	<b>Claire Perrot</b>
<b>Mariana Garfias</b>	<b>Deepika Ramachandran</b>
<b>Emily Garret</b>	<b>J. D. Randol</b>
<b>Dillon Gavin</b>	<b>Kristina Rodriguez</b>
<b>Cynthia Hahn</b>	<b>Diana Rosales</b>
<b>Emily Hapden-Smith</b>	<b>Nelly Rosenburg</b>

**Lindsey Harris**  
**Gaelle Hollandbeck**  
**Debra Joyce**  
**Natalie Kukulka**  
**Karen Larson**  
**Matthew Leonard**

**Sara Schrieder**  
**Hope Snediker**  
**Stephanie A. Sobieraj**  
**Jennifer Sojka**  
**Stefanie Turza**  
**Alexandra Zaas\*** '14, International Relations, Politics; Powell, OH  
**Minxu Zhang**

*Collage Presentations*

*Collage* is Lake Forest College's foreign language literary magazine celebrating the cultural diversity of the campus through written expression in all languages, pictures, artwork and now music. Not only do students contribute to *Collage*, but often faculty, staff and alumni contribute to the publication that appears each spring.

*Faculty Sponsor: Gizella Meneses*

**Elise Beckman\*** '13, Economics; Sacramento, CA

**Robin Cai** '12

**Rebecca Esrock** '13

*Explaining Game-to-Game Ticket Sales for Major League Baseball Games Over Time*

We collected data on more than 10,000 Major League Baseball games from 1985 through 2009 in order to estimate the effect various factors have had on attendance at games over time. Interleague and interleague rivalry contests are associated with higher attendances, but this relationship has been weakening over time. Contrary to some of the previous literature, we find that the likelihood the home team will win is inconsistently estimated over time, lending little support for the uncertainty of outcome hypothesis. This is consistent with the contention that teams have become more adept at using linear pricing schemes when selling tickets.

*Faculty Sponsor: Robert Lemke*

**Hannah Breen**  
**Stephen Bromfield**  
**Keenan Buchanan**  
**Kevin Flynn**

**Ryan Goodwin\***  
**Mariana Green**  
**Syed Hasnain**  
**Tanner Senter**

*Improv Comedy Performance*

We are a group of eight performers, all members of Richard Pettengill's improv theater class. We will be performing a half-hour show of improvised comedy, specifically a type called The Harold. After months of practice, this will be our first performance. Our goal is to represent the theater department but also to bring attention to the improvised comedy community, which so far is relatively unknown by the general population of Lake Forest College.

*Faculty Sponsor: Richard Pettengill*

**Sarah Brune\*** '13, Communication, Politics; Fremont, NE

**Yushin Kohara** '13

*Barack Obama and Open Government*

Barack Obama campaigned for the American presidency promising to make the executive branch more open and accountable to the people. We identify and survey over 850 separate documents from the U.S. Senate, 2005 to 2008, to discern the frequency with which the word "transparency" appears and to understand its contexts. Our purpose being to identify Obama's views on transparency, we compare his

statements with those of other senators, asking: What do Obama's years in the Senate tell us about his open government views? How does his record stack up with that of other senators?

*Faculty Sponsor: James Marquardt*

**J. J. Conoscenti\*** '13, Biology

**Sebastian Di Clemente**

**Alexandra Reeder**

**Kaila Stephens**

*Evolution Before Your Eyes*

Have you ever wondered why evolutionists are so adamant in their beliefs? Come and find out! Four students from Biology 389: Evolution will present examples of evolution that can be seen before your eyes in your lifetime! Come and be intrigued by the evolution of Trinidad guppies, Mediterranean lizards, Florida Soapberry Bugs, and Darwin's famous Galapagos finches. The aim of these presentations is to educate the college about the theory of evolution and to refute the creationist ideology that evolution does not exist. Be enlightened by the truth: evolution is real!

*Faculty Sponsor: Anne Houde*

**Emma Jo Chalverus**

**Jeanne Engelkemeir**

**Fabricio Sordoni**

*Translating "Women of the Twilight": Reading and Discussion*

In Fall 2008, students in Cynthia Hahn's FREN317: Creative Writing and Translation, collaborated with Lebanese author, Evelyne Accad, on the translation of her volume of short stories. This work has resulted in the publication of a bilingual edition of the text, reworked by Cynthia Hahn, as "Femmes du crépuscule/Women of the Twilight" (Paris: Alfabarre, 2011). For their translations, students wrestled with issues of cultural context, verb tense, connotations, language register, consistency of narrative voice, word choice and other translation questions. For this session, three students will read their short story translation and discuss the translation experience: Jeanne Engelkemeir ("Air Hostess: You and Me"), Emma Jo Chalverus ("A Woman Who Wants to Live"), and Fabricio Sordoni ("Sacrificial Woman").

*Faculty Sponsor: Cynthia Hahn*

**David Curie** '13, Physics; Barrington, IL

**Hussein Daraghma**

**Huy Hoang**

**Kosova Kreka** '12, Economics, Physics

*The Wonders of Light*

**Michaelangelo Monterroso**

**Matthew Morrison**

**Lauren Swafford**, Physics; Winchester, IN

**Stamen Tintikov**

The Society of Physics Students, through interactive and fun demonstration will present some interesting facts about light and waves. In this panel, we will show you how we can stop motion by using strobe light. Demonstration of holograms will show the beauty of this technique and how objects can be recorded and reconstructed. Also, with the help of different optical instruments, such as mirrors, different types of lenses, polarizes and of course lasers, we will create spectacular light demonstrations.

*Faculty Sponsor: Michael Kash*

**Amalia DeSardi**, Palatine, IL

**Leah Frenette**, Lancaster, NH

**Jennifer Kurtz**, Park Ridge, IL

**Thandeka Mabuza**, Swaziland

**Julian McLain**, Kenwood, CA

**Trevor Nykaza**, Oak Lawn, IL

**Tom Pospiech**, Hawthorn Woods, IL

**Nadia Vinogradova**, Moscow, Russia

**Maria Zawadowicz\*** '12, Wheeling, IL

*Flames, Fumes and Flashes: Students Fired Up About Chemistry*

The members of the Lake Forest College Student Affiliates of the American Chemical Society (SAACS) have been nationally recognized as an award-winning chapter because of their continuing commitment to and involvement in the community. SAACS will demonstrate central chemical principles through a series of attention-grabbing experiments, including freezing roses with liquid nitrogen, explosive hydrogen balloons, and a colorful ammonia fountain.

*Faculty Sponsor: Elizabeth Fischer*

**Leah Frenette\*** '12, Chemistry, Lancaster, NJ

**Susie Helford**

**Kristen Hernandez**

**Minjin Kim**

**Janet Martinez**

**Mario Martinez**

**Rachiny Samek** '12, Philosophy, Politics; Lansing, MI

*Raising Awareness One Bare Foot at a Time: TOMS One Day Without Shoes*

If you could change the lives of children with a simple gesture, would you do for one day what millions do every day? On April 5th 2011, people around the world will voluntarily go without shoes to raise awareness for the millions of children in developing countries without shoes daily. We will explore the need for shoes in these developing countries, the TOMS One-for-One vision, and the process behind forming a not-for-profit organization and popularizing a movement such as TOMS Day Without Shoes. Join us to discover why participants are choosing to go without shoes.

*Faculty Sponsor: Chris Waugh*

**Mariana Garciagodoy**

**Emily Hilgenberg**

**Karen Larson\*** '11, English; Lakewood, CO

*Dreamweaver, Sing: Celebrating the Marriage of Music and Text*

This performance event is a collaboration among three graduating seniors from Lake Forest College, whose various artistic mediums include photography, composition, creative writing, choral conducting, dance, and theater. The event will feature individual contributions from each artist as well as a world-premiere performance of "Dreamweaver," a new choral work with music by Emily Hilgenberg, text by Karen Larson, and performed by the Lake Forest College Mixed Metaphors, under the direction of Mariana Garciagodoy. The theme of the event is the marriage of text and music, and the inspiration that arises from that union.

*Faculty Sponsor: Emilie Amrein*

**Gina Ambrose**, Twin Lakes, WI

**Samantha Herron**, Psychology, Religion; Clinton Township, MI

**Nicole Moore**, International Relations; Mundelein, IL

**Farzeen Tariq** '13, International Relations

*Community Interaction in North Chicago*

Many students are now participating in service-learning activities, which have led to exciting interactions in nearby communities. The College's connections with the North Chicago Community Partners and the I Have a Dream group have led to a wide range of opportunities with schools in North Chicago. Four Lake Forest College students will describe their experiences with North Chicago students: (1) Gina Ambrose (2014) will discuss her efforts in FIYS 106, as the class developed a presentation on how the

brain works for middle school students; (2) Samantha Herron (2011) will speak about her participation in the tutoring program through Rel 318, which led to an internship with North Chicago Community Partners; (3) Nicole Moore (2011) and Farzeen Tariq (2013) will relate their efforts in EthC 276, in which students discussed King's "Letter from Birmingham Jail" with I Have a Dream high school students.

*Faculty Sponsor: Louis Lombardi*

**Dong Ping Li**

**Chia Maier**

**Khine The\*** '12, Economics, Psychology; Yangon, Myanmar

*Does the Convenience of Accessibility to Water Sources Affect Water Drinking Behavior?*

Can water convenience have a significant effect on people's drinking behavior? Participants (N=38) were recruited through convenience sampling and randomly assigned into two water source conditions: near (water placed on the table) or far (water placed down the hall). After ten minutes of exercise, participants learned the location of the water source and were asked to complete a survey. The amount of water each participant drank was measured. A significant difference was found between the amount of water drank by participants in the near and far conditions. This result might have further implications for people's motivation to drink water.

*Faculty Sponsor: Susan Long*

**Kaitlyn Martin** '13

**Farzeen Tariq\*** '12, International Relations

*Portfolios of the Poor: Macro and Micro Empowerment of Women*

A majority of people around the world struggle to survive on \$2 a day. To adapt to that setting, a variety of informal and formal microfinance tools are used. Local savings clubs, family loans, rotating savings and credit associations (RoSCAs), micro loans, microinsurance, and others provide household financial security, especially for women. These actions are often in contrast to failed international aid programs.

*Faculty Sponsor: Les Dlabay*

**Alyssa Ritchie** '12, Computer Science, Physics

**Lauren Skibiski** '13, Art, French

**Ben Tyler** '11, Computer Science, Physics

**Caroline Walters** '13, English

**Colin Willis** '13, Neuroscience

*Aikido*

In this presentation, we will demonstrate techniques used for self-defense from Aikido, a Japanese martial art that teaches how to create peaceful resolutions by redirecting an opponent's energy to gain control of a situation. Through a series of joint locks, pins, and throws, as well as practice with jo (a four-foot staff) and bokken (a wooden, practice sword), students learn to protect themselves, and they also learn the peaceful philosophy behind the martial art. Morehei Ueshiba once said, "To control aggression without inflicting injury is the art of peace." This is the philosophy we learn at the LFC Aikido Club.

*Faculty Sponsor: Jennifer Saylor*

## **Symposium Committee:**

### **Carla Arnell**

*Student Symposium Co-Chair  
Associate Professor of English*

### **T. R. Bell**

*Head Women's Soccer Coach and Director of Conferences*

### **Karen Blocker**

*Academic Technology Specialist, LIT*

### **Jason Cody**

*Student Symposium Co-Chair  
Associate Professor of Chemistry*

### **Harriet H. Doud**

*Department Supervisor  
Academic Support*

### **Lindsey Drakert**

*New Media and Marketing Coordinator*

### **Rita Koller**

*Associate Librarian*

### **Tracy Marie Taylor**

*Assistant Professor of Art*

### **Lynn Westley**

*Assistant Professor of Biology*

### **Debra Yurenka**

*Assistant Professor of Economics*

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## **Special Thanks:**

Aramark  
Facilities Management  
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