To the Lake Forest College Community:

I am delighted to welcome you to the 2009 Spring Student Symposium. This annual event is a highlight of the academic year at Lake Forest College and an inspiring demonstration of the breadth and depth of our intellectual community. Students from across the College present the fruits of many hours of research and scholarship to audiences of their peers, mentors, friends and families.

This year’s presentations will feature a film based on a three-week trip to China by students and faculty last May, student readings of original fiction and poetry, a statistical analysis of attendance factors at Major League Baseball games, a study of the innovative Rotating Savings and Credit Associations in developing countries, a look at conservative politics following the administration of George W. Bush, an exploration of the science behind color perception, a student’s experience as a Marine Mammals Volunteer at John G. Shedd Aquarium, and many other fascinating presentations and panel discussions. A culminating event will highlight the excellent work of selected students in a classical academic celebration.

I eagerly look forward to this year’s presentations and hope to see you in the audience.

Sincerely,

Stephen D. Schutt
President
A little more than a decade ago, Dean of Faculty, Provost, and Professor of Mathematics Steven P. Galovich proposed an idea that would highlight his passion for the academic work of students. He believed that Lake Forest College should devote a day during the academic year to showcase students and their research. He was so committed to the idea that he recommended the cancellation of classes so students could freely attend and participate in all the events.

The First Annual Student Symposium was held April 7, 1998. Nearly 1,000 members of the College community attended 118 student presentations, poster sessions, music concerts, and other events throughout the day and evening. Never one to stay in his office, a beaming Dean Galovich made a point to go to as many sessions as possible.

Ten years later the Student Symposium — which has since stretched to two days to accommodate growing interest and participation — is stronger than ever. This year, more than 350 students and campus groups will present, perform, demonstrate, and share their scholarship with the College community.

While he would have never taken credit for the idea, Steven Galovich’s mark on this event is undeniable. When he died unexpectedly, Lake Forest College decided to honor his legacy by renaming an occasion that has become an integral part of the College.

We dedicate the annual Steven Galovich Memorial Student Symposium for his contributions to academic discourse and his commitment to celebrating student research.
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Title</th>
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<tr>
<td>10:00</td>
<td>Donnelly and Lee Library Room 203</td>
<td>China Through Student Eyes 10:00 - 10:50</td>
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<td>Model UN Teach-In and Simulation 10:00 - 11:00</td>
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STEVEN GALOVICH MEMORIAL STUDENT SYMPOSIUM

Monday, April 6

OPENING EVENTS

4:00-5:30  Student Art Exhibit with Gallery Talks and Reception
Sonnenschein, Albright, and Deerpath Art Galleries
Durand Art Institute and Deerpath Hall
Moderators: Ann Roberts, Eli Robb
7:00-9:15  Opening Event Festival of the Creative Arts
Mohr Student Center and Reid Hall

Tuesday, April 7

9:30-3:00  Welcome Center, Donnelley and Lee Library
First Floor Lobby

ORAL PRESENTATIONS

Morning Session

Donnelley and Lee Library Room 203

Panel 1  China Through Student Eyes
Moderator: Professor Shiwei Chen
10:00-10:50  Steven Barrow  Sarah Bassinson
Amy Chappuis  Katherine Emery
Chris Janjigian  Ashlee Norton
Allyson Weninger  China Through Student Eyes

Panel 2  Perception and Memory
Moderator: Professor Nancy Brekke
11:00-11:20  Krista Miller
"I'm Hungry for Wax Fruit": An Exploration of the Non-Sequitur’s Communicative Value

Panel 3  Real-world Learning for Young Children
Moderator: Professor Shelley Sherman
10:00-10:50  Samantha Eckerling  Kayla Lord
Lisa Nassir  Charice Wilczynski
Bringing the Community into the Classroom: Real-world Learning for Young Children

Donnelley and Lee Library Room 221

Panel 4  Religious Pluralism and Its Pitfalls
Moderator: Professor Ronald Miller
10:00-11:00  Timothy Hacker  Fiorella Lopez
Austin Stewart  Other Religions: Competitors or Allies?

Panel 5  Doubt, Dissent and the Number Three
Moderator: Professor Ann Roberts
11:00-11:20  Kristen Carpenter
How the Black Death Refocused Early Modern Piety

11:20-11:40  Ashleigh Pembroke
Celtic to Catholic: Art of the Irish Conversion

11:40-12:00  Amy Runyon
A Voice of Dissent: Kathe Kollwitz’s Work During Nazi Rule

Donnelley and Lee Library Room 205

Panel 6  Real-world Learning for Young Children
Moderator: Professor Nancy Brekke
11:00-11:50  Samantha Eckerling  Kayla Lord
Lisa Nassir  Charice Wilczynski
Bringing the Community into the Classroom: Real-world Learning for Young Children

Panel 7  Religious Pluralism and Its Pitfalls
Moderator: Professor Ronald Miller
10:00-11:00  Timothy Hacker  Fiorella Lopez
Austin Stewart  Other Religions: Competitors or Allies?

Panel 8  Let’s Get Physical
Moderator: Professor Nathan Mueggenburg
10:00-11:00  Bushra Alam  Roshnika Fernando
Kosova Kerce  Thandeka Mabuza
Timothy McNamee  Nicole Murphy
Dawson Nodurft  Let’s Get Physical

Johnson 100

Panel 9  Let’s Get Physical
Moderator: Professor Nathan Mueggenburg
10:00-11:00  Bushra Alam  Roshnika Fernando
Kosova Kerce  Thandeka Mabuza
Timothy McNamee  Nicole Murphy
Dawson Nodurft  Let’s Get Physical
**Johnson 200**

**Panel 9**  
**Political and Economic Trends in the Third World**  
Moderator: Professor Paul Orogun  
10:00-10:20  
Anjali Ajikumar  
*Indian Democracy: Questions of Stability*  
10:20-10:40  
Melanie Quall  
*Bolsa Familia: Focalized Policies for Poverty Alleviation in Brazil*  
10:40-11:00  
Erik Wingo  
*Chad: Proxy Wars, Islam, and Petroleum Politics*  
11:00-11:20  
Chris Janjigian  
*Regional Investment Disparity in China*  
11:20-11:40  
Morgan Easter  
*Pakistan: The Crisis of Governance and Democratic Consolidation*  

**Johnson 300**

**Panel 10**  
**SAACS Chemistry Demonstration**  
Moderator: Professor Elizabeth Fischer  
11:00-12:00  
Rebecca Brezinsky  
Danielle Clark  
Shaun Davis  
Timila Dhakka  
Julian McLain  
Emily Pospiech  
Saijidiha Rizwydeer  
Quincy Roberts  
Madhavi Senagolage '12  
Mona Sobhani '10  
Chris Tos sing '09  
Ali Vetter '10  
Maria Zawadowsicz '12  
Xiaoyu Zhu '12  
*Flames, Fumes, and Flashes: Students Fired Up about Chemistry*  

**Hotchkiss Hall 101**

**Panel 11**  
**Twentieth-Century Performances**  
Moderator: Professor Lois Barr  
10:00-10:20  
Wilhemina Hay ford  
*The Drama of Education: Chemistry Class*  
10:20-10:40  
Becca Leland  
*Accepting a Gay Fantasia*  
10:40-11:00  
Rachiny Samek  
*William Inge: Redefinition of Masculinity and Femininity*  
11:00-11:20  
Craig Valstad  
*Epic Theater: An Exploration into the Defamiliarization Techniques of Bertolt Brecht*  

**Meyer Auditorium**

**Panel 12**  
**Neural Frontiers**  
Moderator: Professor Shubhik DebBurman  
10:00-10:30  
Alexandra Ayala  
*Unexpected Realms of Protein Folding: The Good, Bad, and Ugly*  
10:30-11:00  
Nicole Fields  
*Cracking the Dogma: Stem Cells and Regeneration in the Brain*  
11:00-11:30  
Michael Fiske  
*Ready, Set, Nono!*  
11:30-12:00  
Stephanne Levin  
*SMN Deficiency in SMA: Splicing Gone Awry*  

**Young Hall 117**

**Panel 13**  
**Research in High Performance Computing**  
Moderator: Professor Anne Houde  
10:00-10:30  
Scott Jones  
*High-Performance Computing in the Sciences*  

**Young Hall 320**

**Panel 14**  
**Gender: Under Construction**  
Moderator: Professor Carolyn Tuttle  
10:00-10:20  
Samantha Hartwig  
*“Homosexuality” throughout History*  
10:20-10:40  
Kelly Smith  
*Sexuality and Context: Negotiating a Shifting Self*  
10:40-11:00  
Katherine Crockett  
*Behavioral Crockett: Risk Aversion, Power, Gender and Group Decision-Making*  

**Panel 15**  
**Where Have All the Children Gone?**  
Moderator: Professor Kent Grote  
11:00-11:20  
Bryan Burg  
*Abortion and Female Labor Force Participation: Evidence Post Roe v. Wade*  
11:20-11:40  
Anum Haider  
*State Abortion Laws and its Association with Pill Usage*  

**Calvin Durand Hall**

**Panel 16**  
**The Jersey Boys and Girls**  
Moderator: Assistant Athletic Director Cheryl Behnke  
10:00-10:50  
Mario Baldassari  
Jeremy Beyersdorf  
Jill Pfund  
Deepika Ramachandran  
Katie Rice  
James Zender  
*Beyond the Jersey: My Life as a Lake Forest College Student-Athlete*  

**Panel 17**  
**“Welcome to the Friendly Confines. Tonight’s Paid Attendance is...”**  
Moderator: Professor Robert Lemke  
11:00-11:50  
Matt Leonard  
*Kelebogile Thlokwane Competitive Balance and Major League Baseball*  

**Pierson Rooms A and B**

**Panel 18**  
**Betrayals, Constraints, and Proof: Papers on Shakespeare**  
Moderator: Professor Richard Mallette  
10:00-10:20  
Eder Jaramillo  
*“Mislike Me Not For My Complexion”: Masculinity in The Merchant of Venice*
**POSTER PRESENTATIONS**

**Morning Session (10 a.m.-Noon)**

**Simpson Balconies and Corridor**

- **Susan Becker**  
  *The Impact of Color*

- **Catherine Cudahy**  
  *The Federal Theatre Project: Negro Units*

- **Mura Dominko**  
  *The Influence of Subliminal Priming on Behavior*

- **Allison Falls**  
  *The Effect of Racial Markers on Perception: Can a Single Racial Marker Alter the Perceived Race, Personality, and Facial Features of Two Otherwise Identical Faces?*

- **Brittany Goldman**  
  *Adaptive Memory for Location Information*

- **Katie Gorga**  
  *Is Beauty Only Skin Deep? The Relationship Between Personality and Attractiveness Ratings*

- **Mario Mazzetti**  
  *Costumes: An Exploration of Shakespeare's A Midsummer Night's Dream*

- **Stacey Parrott**  
  *Disparate Effects of Aging on Visual Search Tasks*

- **Ava Phisuthikul**  
  *Exploring the Methods and Processes Behind the Chicago Patient Navigation Research Program*

- **10:00-1:00**  
  **Nick Leland**  
  *Human Poetry*

**AIKIDO DEMONSTRATION**

**12:30-1:00 p.m.**

**Mohr Cafeteria**

**Afternoon Session**

**Donnelley and Lee Library Room 203**

**Panel 1  
Habitat for Humanity**

- **Kayla Ahslander**  
  *Habitat for Humanity*

- **Rochelle Chambers**  
  *Laurel Eatherly*

- **Robert Erickson**  
  *Victoria Goldsmith*

- **Andrew Klawitter**  
  *Allie Longenecker*

- **Liz Pimper**  
  *Nathan Rhodes*

- **Tony Ungaro**  
  *Habitat for Humanity: Local, Domestic and International*
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<tr>
<th>Panel 2</th>
<th>Environmental Perspectives</th>
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<td>Moderator: Professor Jeffrey Sundberg</td>
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<td>2:00-2:20</td>
<td>Leah Seull</td>
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<td><em>Class Division Within the American Environmental Movement</em></td>
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<td>2:20-2:40</td>
<td>Elina Dilmukhametova</td>
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<td><em>Speciation in Plants Using a Monkeyflower Model</em></td>
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**Donnelley and Lee Library Room 205**

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<tr>
<th>Panel 3</th>
<th>Literature on the Edge</th>
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<tr>
<td>Moderator: Professor Chad McCracken</td>
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<td>1:00-1:20</td>
<td>Margaret Golembiewski</td>
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<td><em>The King May Do This, and He May Not Do It</em>: Absolutism and Divine Right in “The Maid’s Tragedy”</td>
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<td>1:20-1:40</td>
<td>Danielle Marler</td>
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<td><em>Kingship in Shakespeare’s Second Tetralogy: The Amalgamation of Divine Right and Might</em></td>
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<td>1:40-2:00</td>
<td>Nicole Nodi</td>
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<td><em>A Work in Translation</em></td>
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<td>2:00-2:20</td>
<td>Mary Volk</td>
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<td><em>Beauty, Loss, and Value in The Picture of Dorian Gray and Zuleika Dobson</em></td>
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<th>Panel 4</th>
<th>Math: Theories and Series</th>
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<td>Moderator: Professor Edward Packel</td>
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<td>2:30-2:50</td>
<td>Sudin Kansakar</td>
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<td><em>Surprising Properties of the Harmonic Series</em></td>
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<td>2:50-3:10</td>
<td>Daniel Tietzer</td>
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<td><em>What is Special about 3, 5, 7…6, 10, 14…12, 20, 28, …8, 4, 2, 1?</em></td>
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<tr>
<th>Panel 5</th>
<th>Analyses of U.S. Immigration</th>
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<td>Moderator: President Stephen D. Schutt</td>
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<tr>
<td>1:00-1:30</td>
<td>Amanda Gaulke</td>
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<td><em>Hispanic Immigration and U.S. Policy: Separating Myth from Fact</em></td>
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<td>1:30-2:00</td>
<td>Mariyana Zapryanova</td>
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<td><em>Immigration to the United States: An Interdisciplinary Analysis</em></td>
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<th>Alternatives to Neoliberal Economic Development</th>
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<td>Moderator: Professor Les Dlabay</td>
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<td>2:00-2:20</td>
<td>Rahsaan Islam</td>
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<td><em>Creative Capitalism: Harnessing Global Capital Markets and Social Ventures to Enhance International Development</em></td>
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<td>2:20-2:40</td>
<td>Amma Marfowaa-Nuako</td>
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<td><em>Development with a Human Face: Challenging the Neoliberal Paradigm</em></td>
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<td>Deepika Ramachandran</td>
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<td><em>ROSCAs — One Small Loan Can Make a Difference</em></td>
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**Panel 7**

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**Panel 11**

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<th>Worms and Wild Dogs: Frontiers in Organismal Biology</th>
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1:20-1:40  Elaine Gustafson
The Effect of Social Hierarchy on Behavior in the African Wild Dog

Panel 12  The Stories of Tom Johns
Moderator:  Professor Joshua Corey
2:00-3:00  Tom Johns
—30—

Meyer Auditorium

Panel 13  Parkinson’s Disease and Telomerase
Moderator:  Professor Benjamin Goluboff
1:40-2:00  Alexandra Ayala
Insight into Parkinson’s Disease: Is Alpha-Synuclein Degraded by the Lysosome?
2:00-2:20  Ray Choi
Autophagy’s Role as a Possible Cure for Parkinson’s Disease
2:20-2:40  Shauna Davis
Identification of the Telomerase RNA in the Filamentous Fungus Aspergillus oryzae

Young Hall 117

Panel 14  Teaching the 1950s and “Not For Teachers Only”
Moderator:  Professor Victoria Trinder
1:00-1:40  Carlos Becerra  Timothy Hacker
Lauren Lichtenberger
Not for Teachers Only
1:40-2:00  Valentina Galli
Creating a Secondary Education History Unit: The Defining Decade: The 1950s and Their Role in American Culture

Panel 15  Go Fish!
Moderator:  Professor Karen Kirk
2:00-2:20  Melissa Schramm
Playing Your Cards Right: How Guppies, Poecilia reticulata, Alter Their Courtship Tactics in Varying Social Environments
2:20-2:40  Chris Tossing
Speciation: The Genetics Responsible for Intrinsic Post-Zygotic Isolation
2:40-3:00  Jennilee Wallace
Mode of Phenotypic Inheritance in the Guppy (Poecilia reticulata)
3:00-3:20  Jillian Olejnik
Follow the Leader: Effects of Female Responsiveness on Mate-Choice Copying

Young Hall 320

Panel 16  Nationalism and Transnationalism
Moderator:  Professor James Marquardt
1:00-1:20  Allison Malia
The Modern Olympics: What Do They Reveal about Nationalism, and Nation-State and Globalization?

Panel 17  Studies in Death and Dying
Moderator:  Professor Siobhan Moroney
2:00-2:20  Meagan Cassidy
The Argument for Physician-assisted Suicide
2:20-3:00  Bushra Alam  Mario Baldassari
Benjamin Bienia  Robert Erickson
Emily Lauten  William Stafford
Kelebogile Tlhokwane  Shannon Ver Woert
Elizabeth Wait  Weijing Zhu
Responsibility in the Marketplace: Implications of the Coalition of Immokalee Workers Campaigns
3:00-3:20  Amy Stout
Exploring Life Through the Lens of Death

Calvin Durand Hall

Panel 18  Eukaryon: A Five-Year Review
Moderator:  Professor D. Ohlandt
1:00-2:00  Mohammed Ali  Shaun Davis
Michael Fiske  Stephanne Levin
Elizabeth Pahomov
Eukaryon: A 5 Year Review

Pierson Rooms A & B

Panel 19  Presidential Rhetoric
Moderator:  Professor Caroline Nordlund
2:00-2:20  Kristen Dooley
The Rhetoric of Third-Party Presidential Candidates
2:20-2:40  Mary Ashley Federer
Inaugural Addresses: Words to Rally a Nation
2:40-3:00  Ashley Hall
An Evaluation of Inaugural Addresses
3:00-3:20  Jeni Roberts
Inauguration Speeches

Mohr Skybox

Panel 20  Emerging Market Analysis
Moderator:  Professor George Seyk
1:00-1:40  Colby Friedeman  Aaron Salman
The Economic Stimulus Program and Its Potential Effects on the Navajo Nation
1:50-2:30  Bushra Alam  Max Falalyev
Flora Lujana  Dawson Nodurft
China: Coal or Be Damned?
Reid Hall 100

Music Compositions
Moderator: Professor Donald Meyer

1:00-1:40  Alaina Carlson  Emily Hilgenberg  Matt Kistler  John Termaat
Brian Kedzorski  Michael Knish  Cole Thornton
Experimental Music Group: Videogame Interface in Music Making

1:50-2:30  Jin-Huon Jou  Michael Knish  Joseph Yeo
Cole Thornton
Senior Seminar Compositions

POSTER PRESENTATIONS

Afternoon Session (1:00-3:00 p.m.)

Simpson Balconies and Corridor

Pascal Accoh
Riley Kloss
Reema Upadhyaya
FIYS 106: The Thinking Brain

Daniella Brutman
Grace Dudlicek-Bright
Andrew Glass
Natasha Poulopoulos
Naeem Walji
FIYS 106: Medical Mysteries: Drugs and the Brain

Danielle Clark
Investigation of the Negishi Reaction: The Role of Zinc and the Amine Base

Grace Dunford
The Fourth Annual Brain Awareness Week at Lake Forest College: A Community Research Program

Dina Froustis  Michael Orrison
Hoyt Rees
Biodiversity in the Shooting Star Savannah

Kathleen Gillespie
Kristina Johnson
Saajidha Rizvydeen
Madhavi Senagolage
Shabana Yusufishaq
FIYS 106 Medical Mysteries: Sleep and the Brain

Whitney Hales
Robert (Bobby) Hodges
Marty LaBelle
An Inquiry into the Biodiversity of a Ravine Forest

Penina T. Green
David Konefal
Eliot Vildaver
Species Composition and Biodiversity in the Meadows of Lake Forest, Illinois

Jillian Olejnik
Sea Lions, Penguins, and Fish, Oh My!

Emily Pospiech
Substituent Effects of Ary Halides in the Sonogashira Reaction

Katie Rice
Synthesis of New Molecules in Ionic Liquids

Erika Rodriguez
Kristina Rodriguez
Carbon Footprint ’09: Starting on the Path to a Carbon-Free Campus

Natalie Simak
Brittany Stern
Pollen Dispersal in Helianthus Maximilianii and Potential Implications on Genetic Variation

Gabriela Siszer
Expression of Cancer Vaccines in Suicidal Leishmania for Immunotherapy

Daysi Vargas

ART CLUB PRESENTS CHANGE EXHIBIT

10:00-4:00 pm

Library – First Floor

ICE CREAM SOCIAL AND INTERNATIONAL DANCE CLUB PERFORMANCE

3:30-4:00 pm

Mohr Café and Stage

CLOSING EVENT

4:15-5:45  Honoring Student Achievement in Research and Creative Work Across the Liberal Arts Disciplines

Lily Reid Holt Memorial Chapel
Presented by Panhellenic Council of Lake Forest College
Anne-Marie Adams '12; Chicago, Illinois
Alice Paul—the Iron Jawed Angel of Victory
The women’s rights movement began at the Seneca Falls Convention in 1848, when women started organizing themselves in order to gain rights. While the beginning leaders were very influential and much of the movement was strong, it was Alice Paul’s activism that was the most successful at advancing the cause of women’s suffrage. Her approach was more effective because she vigorously demanded a constitutional amendment rather than campaigning state by state like the National American Woman Suffrage Association. Refusal to pause the movement after the outbreak of World War I contributed to the passage of the Nineteenth Amendment to the U.S. Constitution, which guaranteed women the right to vote.

Faculty Sponsor: Siobhan Moroney

Anjali Ajaikumar '09; Chicago, Illinois
International Relations, Politics
Indian Democracy: Questions of Stability
The stability of India’s young democracy has been questionable in various ways. This presentation offers an analysis of three contemporary issues—health, education, and women’s rights—that bear on the legitimacy and stability of Indian democracy. Additionally, the presentation considers the impact of Indian federalism on these issues.

Faculty Sponsor: Chad McCracken

Joshua Anderson '10; Fort Pierce, Florida
Art, American Studies
A New Look at the Plan of Chicago
The Burnham and Bennett Plan of Chicago, 1909, is one of the crowning jewels of the City Beautiful movement and has a tremendous impact on the terrain of the city. This year it is celebrating its centennial, truly the founding such plan for many U.S. cities, and a training ground for future planners. It’s important to know the motivations behind the Plan and its implications for the city of Chicago as it is and how it was then envisioned. New information from the Edward Bennett III and Marcia O. collection of co-author Edward H. Bennett’s personal correspondence, drawings, photographs, and plans, received in the library’s Special Collections last November adds significant new information necessary for understanding the process of developing the Plan and also Burnham’s relationship to the young Bennett, who carried on his work in the new planning field. Through computer models and Bennett’s sketches we will see how the city was envisioned in 1909.

Faculty Sponsor: Arthur Miller

Alexandra Ayala '09; Caracas, Venezuela; Biology
Insight into Parkinson’s Disease: Is Alpha-Synuclein Degraded by the Lysosome?
Parkinson’s disease (PD) is a neurodegenerative disorder characterized by the accumulation of the alpha-synuclein protein. Enhancing alpha-synuclein degradation may prevent accumulation and protect cells against toxicity. For my thesis, I used a budding yeast model to understand if alpha-synuclein is degraded by the lysosome and if it uses the multivesicular body (MVB) pathway to get there. Specifically, I evaluated alpha-synuclein localization, accumulation, and toxicity in yeast lacking specific protein complexes (ESCRT-I, II, and III) that mediate the MVB pathway. While our data indicates that the MVB pathway may be the degradation route, the extent of ESCRT involvement appears unexpectedly complex.

Faculty Sponsor: Shubhik DebBurman

Alexandra Ayala '09; Caracas, Venezuela; Biology
Unexpected Realm of Protein Folding: The Good, Bad, and Ugly
The final project of BIOL 480 Senior Seminar was role-playing a leading biologist in the field of neuroscience. I role played protein folding pioneer Susan Lindquist who studies whether altered protein shapes are detrimental or beneficial to life. Our lab showed the world that simple yeasts provide insight into the unexpected world of protein folding. We generated yeast models to discover molecules that combat neurodegenerative diseases like Parkinson, Huntington, and prion disease. Finally, we discovered that altered protein shapes in yeast can act as genes (called “prions”) and promote the survival of new, beneficial traits.

Faculty Sponsor: Shubhik DebBurman

Mario Baldassari ’11; Fort Wayne, Indiana; Psychology
A Phylogenetic Study of Mind Through Crayfish Behavior and Cultural Evolutionary Theory
Are our behaviors and emotions our own, or are these attributes innate? To find out, we are looking in depth at phylogenetics, from crayfish to people. What can crayfish learn, how much can they remember, and how much of their instincts are wired by evolution? Furthermore, how much can we relate to humans? Crayfish may have complicated digging processes as well as habitat preferences and memories. At the same time, we are reviewing a recent theoretical study of human evolution of social behavior by Peter J. Richerson and Robert Boyd entitled Not by Genes Alone: How Culture Transformed Human Evolution.

Faculty Sponsor: Robert Glassman
Susan Becker '12; Des Moines, Iowa; Independent Scholar
The Impact of Color
As you read this abstract, others are reading you. Color is a powerful tool. The colors you choose to wear and to decorate your house with and the color of the car you drive and the environment in which you choose to study have a deep impact on your emotions and behaviors. This presentation explores the science behind color perception, differing cultural interpretations of color, and the constant use and manipulation of color by the business world.
Faculty Sponsor: Robert Glassman

Bryan Burg '09; Slinger, Wisconsin; Economics
Abortion and Female Labor Force Participation: Evidence Post Roe v. Wade
The increase in the Female Labor Force Participation Rate (FLFPR) has been a well known market occurrence over the past five decades. The number of women entering into the labor force has progressively increased since the 1800s and from World War II has augmented greatly. Based on my studies, I contend that one variable which directly contributed to this increase has been the legalization of abortion. I examine whether the national liberalization of abortion using female labor rates data from the March Current Population Survey (CPS) will have a positive correlation with abortion rates post Roe v. Wade.
Faculty Sponsor: Kent Grote

Emily Capettini '09; Batavia, Illinois; English, French
“Give me ocular proof”: The Problem of the Trinket in Othello and Cymbeline
Othello and Posthumus, both jealous husbands, rely obsessively on “ocular proof,” visual evidence of their wives’ infidelity. The damning evidence in both cases turns on a mere trinket: Desdemona’s handkerchief, Imogen’s bracelet. This paper examines the jealousies of the husbands, the miscommunications between husband and wife, and the terrible consequences of placing marital faith in trivial objects.
Faculty Sponsor: Richard Mallette

Kristen Carpenter '09; Winnetka, Illinois; Art History
How the Black Death Refocused Early Modern Piety
The Black Death, or Bubonic Plague, was one of the deadliest pandemics in human history, killing between 30 and 60 percent of Europe’s population. The widespread and permeating effects of the disease changed many aspects of European culture, including art. By examining 14th and 15th century religious Italian images, this paper argues that because popular thought blamed God for the plague, people turned their religious and artistic attention towards the Virgin and Saints for protection. As a result, earlier devotions to the Virgin were strengthened, and saints became more prominent figures in art.
Faculty Sponsor: Ann Roberts

Daryn Cass '10; St. Charles, Illinois
Biology, International Relations
Prolonged Withdrawal from Cocaine Affects Frontal Cortical Activity in the Rat Brain
This project was conducted at Rosalind Franklin University in Dr. Kuei-Yuan Tseng’s lab. In order to determine how repeated cocaine administration impacts the overall functional state of the brain reward network, we assess cytochrome oxidase (CO-I) staining as a measure of brain activity. We found a significant CO-I increase in several frontal brain regions after three weeks, not three days withdrawal from repeated cocaine. A change in function of these brain regions could lead to behavioral deficits as they are involved in working memory and decision making.
Faculty Sponsor: Shubhik DebBurman

Meagan Cassidy '12; East Hampton, New York
English, Politics
The Argument for Physician-assisted Suicide
Physician-assisted suicide has only gained attention only in the last two decades, but it has quickly emerged as one of the most controversial issues in modern day medicine. Few countries in the world consider the practice legal. In the United States, only Oregon, and more recently, Washington State, allow for it. This presentation explores four reasons why people take issue with physician-assisted suicide. It also explains the flaws in their arguments. The fight to legalize physician-assisted suicide is a battle for basic human rights to one’s own body.
Faculty Sponsor: Siobhan Moroney

Patrick Casten '09; Wells, Maine; Politics
A Movement at the Crossroads: How the Bush Foreign Policy has Railroaded the American Conservative Movement
The Bush Administration has shattered the Conservative Movement in the United States. From the wars in Iraq and Afghanistan and beyond, George W. Bush’s foreign policy has split and divided a coalition forged a generation earlier during the Reagan Revolution. It is my contention that the Bush foreign policy has fundamentally changed the American Conservative Movement forever, and it may be decades before the movement will regain the political traction lost during the past eight years.
Faculty Sponsor: James Marquardt

Alexandra Charron '09; Calgary, Canada; Biology
A Mutant Strain of Worms That Can’t Make Their Muscles Stick
Developmental biology seeks to explain the fascinating sequence of events that allows a single cell to develop into a complex functional organism such as a person. Our lab is particularly interested in the genes that control organ development. We use the pharynx of the microscopic worm, Caenorhabditis elegans, as our model organ. We have selected two mutant strains, M136 and M138, which are characterized by extreme disorganization of the pharynx muscle. We hypothesize these mutant phenotypes are a result of abnormal adhesion of cells. Our goal is to determine the location and identity of the mutant alleles using a variety of methods.
Faculty Sponsor: Pliny Smith
Jessica Chio '09; Arlington Heights, Illinois; Communication
Feminist Theory and Twin Peaks
The popular 1990s television show, Twin Peaks, represents a kind of divergence from many established regimes of storytelling and signification in American television. In this presentation, I will analyze Twin Peaks in terms of feminist theory; examining the subversion at work in the show's updating of the police procedural, as it relates to portrayals of women. In particular, I will focus on how major characters from the show—male and female—relate to gender, and in turn look at how these gendered roles renegotiate gender expectations.
Faculty Sponsor: David Park

Danielle Clark ’09, Chemistry
Investigation of the Negishi Reaction: The Role of Zinc and the Amine Base
The Negishi palladium cross-coupling reaction uses zinc to assist with the formation of carbon-carbon bonds. In this thesis project, the role of zinc was examined by varying the quantity, ranging from catalytic to excess amounts. These results were compared to the reactions run without a metal as well. Zinc was found to only improve reaction rates when used in quantitative or excess amounts. The role of the amine base in the Negishi reaction was also investigated. Both basicity and steric hindrance were found to affect the reaction rate, suggesting the base plays a significant role in the metal ligand formation.
Faculty Sponsor: William B. Martin

Katherine Crockett ’10; Tulsa, Oklahoma; Economics
Behavioral Economics: Risk Aversion, Power, Gender, and Group Decision-Making
Current literature supports the assumption that women tend to be more risk-averse and men tend to be more risk-seeking. Stereotypically, the man of the house has the largest influence over financial decisions which would cause us to expect that when “couples” make joint decisions they would reflect his preference for risk. Moreover, when individuals are faced with risk, it may be interesting to analyze what determines that individual’s risk preference and whether they are consistent. Determining risk preference and individual power within a joint decision is accomplished by running an experiment that simulates a joint decision process.
Faculty Sponsor: Amanda Felkey

Catherine Cudahy ’11; Draper, Utah
Elementary Education, Theatre
The Federal Theatre Project: Negro Units
Negro Units of the Federal Theatre Project raised awareness of African American issues and concerns while also providing opportunities for Negro performers. “This display presents historical information about the Negro Units as well as publicity materials from the time.”
Faculty Sponsor: D. Ohlandt

Shaun Davis ’09; Shoreview, Minnesota; Biology
Identification of the Telomerase RNA in the Filamentous Fungus Aspergillus oryzae
The ribonucleoprotein, telomerase, has an RNA and a protein component that maintains the repetitive sequences at the ends of linear chromosomes, the telomeres. As part of a larger project to understand telomere length regulation in filamentous fungi, we are attempting to identify the telomerase RNA gene of the mold, Aspergillus oryzae. Since homology searches are unsuccessful with this gene, we searched the genome for the 12bp that is part of the known telomerase template and have identified 24 candidate sequences. Using RT-PCR, I have identified one sequence that is strongly transcribed and am determining the complete length of this transcript.
Faculty Sponsor: Karen Kirk

Elina Dilmukhametova ’09, Biology
Speciation in Plants Using a Monkeyflower Model
While it is easy to conceive how new species of animals evolve due to changes in behavior, ecological niche, or even climate, speciation in plants is less obvious. Come and learn how new species of plants can arise from an existing species in the same habitat. A change in shape and color of flower, induced by an alteration in a single gene, can lead to pollinator shift. Two closely related species of monkeyflowers have different pollinators and are thus prevented from interbreeding, ensuring stability of their separate species status. Many other plants form intimate and exclusive plant-pollinator relationships.
Faculty Sponsor: Anne Houde

Kristen Dooley ’09; Meridian, Idaho; Communication, English
The Rhetoric of Third-Party Presidential Candidates
The rigid two-party political system in the US creates unique challenges and opportunities for third-party and independent presidential candidates. This presentation will examine the rhetoric of these candidates as they try to break into the two-party system, investigating the themes, strategies, audiences, and language of their speeches and essays. The ways in which these candidates relate to, subvert, build upon, and try to tear down the current political system offer important insights into our government and our role in shaping it.
Faculty Sponsor: Dan LeMahieu

Grace Dunford ’09; Los Altos, California; Biology, Music
The Fourth Annual Brain Awareness Week at Lake Forest College: A Community Outreach Project
During Brain Awareness Week 2008 at Lake Forest College, FIYS 106 Medical Mysteries and BIOL 480 Neural Frontiers students partnered in a public outreach campaign informing the community of current neuroscience research. This event for four years has taught research and communication on scientific topics and scientific collaborations and mentoring. After rigorous preparation, first year and senior seminar students publicly displayed their work throughout the week. As the FIYS 106 peer teacher, I will address strategies strengthening both learning and teaching. I will also discuss my role in helping students work together to produce an array of presentations exhibits, teach-ins, and seminars.
Faculty Sponsor: Shubhik DebBurman
Morgan Easter ’09; Vancouver, Washington
International Relations
Pakistan: The Crisis of Governance and Democratic Consolidation

The quest for nation-building in Pakistan and the consolidation of a viable democratic government has proved to be precariously elusive. A legacy of military dictatorship has hampered the dynamics of democratic consolidation and yet, Pakistan continues to play a militarily formidable and geo-strategic role in the region. Super power rivalry in the Cold War era, the current War on Terror and the resurgence of Islamic Fundamentalism has accentuated Pakistan’s role in world affairs. This presentation contextualizes these issues and examines the effects the crisis of governance has engendered on human rights issues, economic development and India-Pakistan cross-border conflicts.

Faculty Sponsor: Paul Orogun

Mary Ashley Federer ’12; Tucson, Arizona; Politics
Inaugural Addresses: Words to Rally a Nation

As a president’s ceremonial first words to the nation, the inaugural must rhetorically and contextually fulfill certain elements in order to satisfy the needs of the eager American public and the expectations of history. My research examines the elements of an inaugural address and compares President Obama’s and those of former President George W. Bush. This comparison exemplifies the key elements of an inaugural and how a president can properly employ them to unify the nation.

Faculty Sponsor: Caroline Nordlund

Nicole Fields ’09; Libertyville, Illinois; Biology
Cracking the Dogma: Stem Cells and Regeneration in the Brain

This talk represents the research I did by role-playing a world famous neuroscientist, Fred Gage, for BIOL 480 senior seminar Neural Frontiers. The adult brain was thought to be devoid of stem cells and incapable of regeneration after injury. Our lab made two fundamental contributions that broke that dogma. We demonstrated that stem cells exist throughout the brain and have broad potential to become a variety of brain cells. We also uncovered various factors and tools that aid in using stem cells as an effective therapy. The creation and understanding of these provide new potential for degenerative disease and regeneration biology.

Faculty Sponsor: Shubhik DebBurman

Michael Fiske ’10; Northbrook, Illinois; Biology
Insight Into Parkinson’s: Do Certain Protein Modifications Doom Cells?

Parkinson’s disease (PD) is a devastating and incurable neurodegenerative disorder that afflicts over one million Americans. Large clumps of the protein alpha-synuclein are present in the brains of patients afflicted with PD, but how these clumps contribute to cell death is unclear. The alpha-synuclein inside these clusters is heavily modified through the attachment of phosphate groups, yet how these modifications contribute to alpha-synuclein dependent toxicity is unresolved. Alpha-synuclein also associates strongly with the plasma membrane of cells, but the role membrane binding plays in cell death is undetermined. I seek to answer these questions using two yeast PD models.

Faculty Sponsor: Shubhik DebBurman

Michael Fiske ’10; Northbrook, Illinois; Biology
Ready, Set, Nogo!

This presentation is the culmination of research I did while role-playing a leading neuroscientist, Dr. Stephen Strittmatter for BIOL 480 senior seminar Neural Frontiers. Dr. Strittmatter studies the molecular basis of the differential capacity for regeneration in the central (CNS) and peripheral nervous system (PNS). The PNS readily regenerates after injury while the CNS is inhibited by a number of different factors. My presentation during this years Student Symposium will explain a significant contributor to this inhibited regeneration, the Nogo protein, and the numerous significant events that led to its discovery.

Faculty Sponsor: Shubhik DebBurman

Valentina Galli ’09; Buffalo Grove, Illinois
History, Secondary Education
Creating a Secondary Education History Unit: The Defining Decade: The 1950s and Their Role in American Culture

Teachers must practice the elements and strategies of successful curriculum design. In the capstone course of the History/Secondary Education major, the culminating project is the development of a three-week instructional unit plan for a hypothetical high school history classroom. Through research about historical information, teaching strategies and curriculum design, I created a unit on American culture in the 1950s, which examined elements of 1950s culture, counter-culture and their interactions. By engaging in this unit of study, students would be able to achieve the ultimate goals of understanding the elements above and their significance in defining a decade.

Faculty Sponsor: Rachel Ragland
Amanda Gaulke ’09; Hartland, Wisconsin; Economics, Spanish
Hispanic Immigration and U.S. Policy: Separating Myth from Fact

My research separates myth from fact on matters pertaining to immigration to the United States, including the education levels of immigrant adults and their children, the assimilation of immigrants into American culture, and the economic effect of immigration on wages, prices, and growth. Regression analysis is applied to the 2000 Census data to investigate how different personal characteristics affect the earnings of Hispanic immigrants and which country-of-origin characteristics have an immigrant’s economic success.

Faculty Sponsor: Robert Lemke

Brittany Goldman
Adaptive Memory for Location Information

Nairne, Thompson, and Pandeirada (2007) reported enhanced recall and recognition of words when participants processed the words using a ‘survival’ scenario, as compared to a ‘moving’ scenario or scenario in which they simply rated the pleasantness of the words. They suggested that this was an adaptive feature of memory. The current experiments were designed to determine whether this memory benefit extends to the memory of an object’s location in space. Preliminary results suggest that the benefit of ‘survival’ processing does not extend to location memory. Implications are discussed.

Faculty Sponsor: Matthew Kelley

Margaret Golembiewski ’10; Chicago, Illinois
English Literature, Music
“The King May Do This, and He May Not Do It”: Absolutism and Divine Right in The Maid’s Tragedy

How can a play in which the actions of an absolutist King bring about corruption, misery, and the death of his subjects be seen as favoring the idea of Divine Right? Over the centuries, scholars have criticized Jacobean playwrights John Fletcher and Francis Beaumont for their tendency to appease and condone the political tastes and policies of King James I and his court through their plays. In The Maid’s Tragedy, however, a close examination of the text suggests that Beaumont and Fletcher were actually critiquing the policies of Absolutism and of Divine Right.

Faculty Sponsor: Richard Pettengill

Elaine Gustafson ’10; Medinah, Illinois; Biology
The Effect of Social Hierarchy on Behavior in the African Wild Dog

The species Lycaon pictus, has a strict male and female social hierarchy which affects the behavior of individuals in the pack. I studied differences in behavior between alpha, beta, and lower pack members. I observed a four-member adult male African wild dog pack at the Lincoln Park Zoo in Chicago, Illinois for two months. I measured spatial closeness, patterns in resting behavior, and the frequency of specific behaviors among individuals. The Alpha and Beta males showed more closeness, a higher frequency of pacing behavior and standing and watching behavior than lower pack members.

Faculty Sponsor: Anne Houde

Anum Haider ’10, Economics, History
State Abortion Laws and its Association with Pill Usage

Several factors come into play when a woman opts to use birth control pills or have an abortion, the latter of which has been gradually declining in the United States. This project investigates the factors causing the decline, with an emphasis on increased birth control pill usage. The project reviews what past research indicates about changes in pill usage and induced abortions. It also looks at factors affecting the decision to have an abortion, such as religiosity, educational attainment, and age. The ultimate goal of this ongoing project is to find out how state laws affect birth control pill usage.

Faculty Sponsor: Amanda Felkey

Joel Hainsfurther ’09; Highland Park, Illinois; Politics
The Security Dilemma and U.S. - Iranian Relations Since 9/11

The competition for security under anarchy is a central theme of realist international relations theory. It provides a framework to describe and explain the deterioration in U.S. – Iranian relations and, since 9/11, Iran’s nuclear ambitions. President Bush’s designation of Iran as part of the “axis of evil” and the U.S.’s subsequent invasion of Iraq elevated Iran’s security concerns. Iran sought to improve its security situation by reaching out to friendly political parties in Iraq and providing funding and arms to militias opposed to the U.S. occupation. Iran subsequently accelerated its efforts to pursue a nuclear option. These activities raised U.S. security concerns in the Persian Gulf region. Realism is pessimistic about the prospects of security cooperation between the two countries.

Faculty Sponsor: James Marquardt

Ashley Hall ’10; Tega Cay, South Carolina
American Studies, Theater
An Evaluation of Inaugural Addresses

Arthur Schlesinger argues, “The inaugural address is an inferior art form. It is rarely an occasion for original thought or stimulation reflection.” While the typical inaugural address may not offer shockingly new ideas, it is a ceremonial occasion where the incoming president gets the chance to unite his audience and rehearse the communal values of the American people. Both President George W. Bush’s inaugural address in 2001 and the address given by President Barack Obama in January rely heavily on these two essential tactics.

Faculty Sponsor: Caroline Nordlund

Samantha Hartwig ’09; Belvidere, Illinois; Economics, French
“Homosexuality” Throughout History

In this presentation, I will examine the etymological history of terms used to describe those individuals who engage in same-sex relationships, what we now refer to as “homosexuals” and the ways in which those labels have affected their behavior throughout history. I will suggest that the idea that “homosexuality” and the behaviors and perceptions about people who engage in homosexual activities has changed as the labels used to describe them has changed. Through historical accounts, I propose that the modern notion of homosexuality could not have existed before the late 19th century, because our ideas of sexuality were different.

Faculty Sponsor: Steve Tammeleo
Wilhemina Hayford '12, Accra, Ghana
The Drama of Education: Chemistry Class
In Richard Schechner’s theory of Performance Studies, he defines performance as “...whether in performing arts, or everyday life, [anything] consisting of ritualized gestures and sounds.” In our THTR 110: Origins and Theories of Theatre class, we applied Schechner’s theory to a case study. I chose a chemistry class to observe for the various elements of performance, and found various facets such as conflict, character and denouement, and in this presentation, I share my findings.
Faculty Sponsor: D. Oblandt

Christopher Janjigian '10
Regional Investment Disparity in China
China’s explosive growth in the past two decades has created what may well be the single most rapid expansion of the middle class in history. Following the economic reforms introduced after the death of Mao Zedong, China’s poverty rate fell from 60 to less than 10 percent. This coincided with dramatic increases in quantitative measures of quality of life. Despite these successes, imbalances in development mean that many of those still in poverty suffer worse conditions now than during the pre-reform era. This presentation will discuss the nature of infrastructure development and international investment in China from both an historical and economic perspective, with a particular focus on regional disparities.
Faculty Sponsor: Shiwei Chen

Paul Henne '11; Waterbury, Connecticut; English, Philosophy
Constrained Women in Hamlet and Twelfth Night
In their focus on virtuous, obedient, and therefore moral women characters, Hamlet and Twelfth Night, both staged around 1600, lay bare what we might regard as misogynistic societal structures. The comedy dramatizes women’s subordination with relative benevolence; the tragedy highlights consequences of women’s autonomy and insubordination. More specifically, Twelfth Night portrays and endorses women’s subordination, while Hamlet illustrates the unhappy consequences of women characters’ attempts to defy male authority and the necessity of women’s inferior role.
Faculty Sponsor: Richard Mallette

Rahsaan Islam '09; Lisle, Illinois
Economics, International Relations
Creative Capitalism: Harnessing Global Capital Markets and Social Ventures to Enhance International Development
The traditional pathways to international development have bypassed millions of people. Institutions with stated missions to alleviate poverty have failed to enable the poor to improve their standard of living. Social business is the key to enhancing international development. By channeling capital available for social investment efficiently and subsequently creating sound and sustainable social business models, there is much potential to harness the current capitalist framework to include world’s poor population in today’s globalization phenomenon. Doing so will improve the standard of living throughout the world and will provide a better alternative to the classic neo-liberal approach to development.
Faculty Sponsor: Les Dlabay

Scott Jones '09; Computer Science, Philosophy
High-Performance Computing in the Sciences
The increased availability of powerful computers is changing the face of scientific research. New drugs can be tested without have to mix real chemicals. Physics experiments can be performed without the need for physical objects. Other examples include simulating the spread of disease and the effectiveness of a potential cure, the human genome project, and the big bang theory. The good news is that our existing lab computers can be tied together to form powerful “cluster” computers. The bad news is that developing software for these computers is difficult. This talk will present work from the Computer Science Senior Seminar in High-Performance Computing.
Faculty Sponsor: Joe Hummel

Eder Jaramillo '09; Grayslake, Illinois; English Literature
“Mislike Me Not For My Complexion”: Masculinity in The Merchant of Venice
This study shows how characters perform gender as they seek to meet the demands of their setting. In the fairy-tale-like world of Belmont, where men come “from the four corners of the earth” to seek the “lady richly left,” Portia’s suitors must put on their best suits as wooers. The choice of caskets by the three suitors—Morocco, Aragon, and Bassanio—shows how each plays the part that best suits his peculiar masculine identity. Portia recognizes and catalogs the different types of masculine behavior, which she later uses successfully to play the part of a young lawyer at the court.
Faculty Sponsor: Richard Mallette

Tom Johns '09; Chicago, Illinois; English
—30—
‘Tom Johns’ —30— is a collection of creative writing that primarily includes realistic and satiric short stories, creative non-fiction, and parodies. Themes common to the works in the collection are human need, fallibility, and yearning. Most of the works also ruminate on the effects of media and popular culture and how these forces permeate the lives of modern Americans; some works focus on parasocial relationships (indirect but intimate one-way relationships people form with media figures). In examining contemporary Western culture and its existential crises, the collection sometimes employs a confessional and self-referential style. —30— includes explicit content and language.
Faculty Sponsor: Benjamin Goluboff

Sudin Kansakar '09; Nepal, Mathematics
Surprising Properties of the Harmonic Series
While the infinite sum known as the harmonic series may seem elementary in form, it provides fascinating mathematics and interesting applications. We will discuss a variety of surprising aspects of the harmonic series and provide a “meta-proof” of its divergence. We will also discuss a remarkable property of the alternating harmonic series.
Faculty Sponsor: Edward Packel
**SMN Deficiency in SMA: Splicing Gone Awry**

This talk represents the research I did while role-playing a world famous neuroscientist, Gideon Dreyfuss, for BIOL480 senior seminar Neural Frontiers. Spinal muscular atrophy (SMA) is the most common motor neuron degenerative disease and is the principal genetic cause of infant mortality. The survival of motor neurons (SMN) gene has been implicated as the disease-causing gene in SMA. We have found that SMN is important in RNA splicing, and defects in splicing are seen in SMA patients. It is unclear, however, why only motor neurons die in SMA patients despite the fact that splicing aberrations are present in all cells throughout the body.

*Faculty Sponsor: Shubbik DebBurman*

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**The Magnetic Susceptibility of a Superconductor**

I will discuss the experimental design of an AC susceptometer and its use in measuring magnetic susceptibility. Magnetic susceptibility is a dimensionless constant of proportionality that determines whether a material enhances a magnetic field (paramagnetic) or diminishes a magnetic field (diamagnetic). We are particularly interested in measuring the magnetic susceptibility of a superconductor. When a superconductor is cooled below its critical temperature its magnetic field becomes zero (the Meissner Effect). Under these conditions there is a dramatic change in the susceptibility and, as a result, we can accurately determine its critical temperature.

*Faculty Sponsor: Scott Schappe*

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**Human Poetry**

My project involves a pair of models — one male, one female — wearing clothing similar to bathing suits — though slightly more concealing. Upon these two models, I will paint long poems. Both poems will be about the nature of being an object, illustrating the way in which people interact with literary works and encouraging viewers to question the way in which they interpret poetry. In addition, there will be an accompanying explanation to facilitate the understanding of the work.

*Faculty Sponsor: Joshua Corey*

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**A Comparison of Power Dynamics in Prostitution and Marriage**

Although prostitution and marriage are two seemingly incongruent spheres of human interaction, my research led me to conclude that there are significant similarities in power dynamics and kinship structures between these spheres. The dominance men have over women and the sexualization of power by our culture are the two most striking findings from my research and fieldwork. This paper focuses on these power dynamics between men and women, and demonstrates that prostitution and marriage are two ends of the same spectrum: men “exploit” women in prostitution and “protect” women in marriage.

*Faculty Sponsor: Holly Swyers*

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**Accepting a Gay Fantasia**

This paper asserts that despite regional politics, society had an overwhelmingly positive reception of Tony Kushner’s “Angels in America.” The paper analyzes reviews from New York, Chicago, San Francisco, Salt Lake City, and Clearwater, Florida. In 1991, the San Francisco Chronicle claimed that the show has “a vital mix of lyricism and impetuous humor, impassioned argument and a magical sense of wonder.” Salt Lake City’s Desert News published a review of the show, warning that “the play features swearing, crude talk and strong sexual themes.” Each city had its view of the play’s themes because of the regional politics, but in the end, each praised the show.

*Faculty Sponsor: Benjamin Goluboff*

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**Development with a Human Face: Challenging the Neoliberal Paradigm**

For the past 30 years, neoliberals in the form of the Washington Consensus have presented the dominate theory for third-world development. However, privatization, deregulation, and free trade have not improved levels of development in areas around the world such as Africa and South America. So are these places in the South destined to be poor forever? Is there an alternative development method to the neoliberal paradigm? The answer comes from plans put forth by the Global Justice Movement in the form of sustainable development and production.

*Faculty Sponsor: Les Dlabay*
Amma Marfowaa-Nuako '09
International Relations, Sociology/Anthropology
Love in the Time of Capitalism

Drawing on themes of the rationalization and commodification of love under capitalism, I examine how people present themselves for relationships in Internet dating. According to sociologists the self is presented through dramaturgy or as a manufactured package. From this theoretical understanding, I conducted an experiment by creating a resume based on emotions for fictional people looking for love online. Based on the responses I received from this experiment, I discovered that love has become calculating and predictable and that emotions and the self have become manufactured commodities that are packaged and sold as love online.

Faculty Sponsor: Holly Sayers

Danielle Marler '09; Hillsboro, Missouri; Politics, Psychology
Kingship in Shakespeare’s Second Tetralogy: The Amalgamation of Divine Right and Might

This presentation analyzes how a sovereign legitimizes his authority, the central motif of Shakespeare’s Richard II, Henry IV Parts I and II, and Henry V. While Richard II’s sole justification of divine right ultimately led to his downfall, Henry IV’s emphasis on military power proved equally deleterious to his reign. Henry V’s blending of these two justifications brought stability to the English throne. Though military power is an obvious necessity to maintaining a stable kingship, Richard II’s incorporation of the divine into the kingship proves to be a necessary component of a healthy kingdom in Shakespeare.

Faculty Sponsor: Chad McCracken

Mario Mazzetti ’10; Lake Zurich, Illinois; English, Theater
Costumes: An Exploration of Shakespeare’s A Midsummer Night’s Dream

After having taken Theater Design: From Page to Stage, I delved into the fast-paced world of costume design at Lake Forest College. As a first-time designer, I worked closely with Director Richard Pettengill, Technical Director Dennis Mae, and Costume Director Janice Pytel to research and create costumes which garnered a nomination for the Barbizon Award for Technical Design Excellence. The costumes explored the different worlds within the play, and used color and period style to distinguish between them. Consideration was taken in regard to time, materials, and budget to create a design that fit our cast and our production.

Faculty Sponsor: Dennis Mae

Tim McNamee ’09; Winter Haven, Florida; Physics
Granular Compaction

A granular material is any group of large particles such as a bag of potato chips or a box of cereal. When a granular system is repeatedly shaken, the particles that make up that granular system rearrange and pack more closely together. This process of granular compaction is rather complex. Some theories suggest the use of two time scales to explain these complexities. In my experiments I attempted to separately observe these time scales by applying a downward force to a granular system while vertically shaking it. In this presentation I will discuss the effects of this confining force on granular compaction.

Faculty Sponsor: Nathan Mueggenburg

Kyle Meredith ’09; Tampa, Florida; Politics, Sociology
The Undemocratic Executive

The Presidency has gone through numerous changes in the scope of its power and its responsibilities over time. The boundaries of the Chief Executive’s power have been in flux since the founding of the Republic. It is undeniable that Presidential powers have expanded dramatically since then, with only moderate and infrequent periods of diminished powers. It is my finding that wartime and civil unrest have justified the expansion of presidential powers, and that Congress and the courts have been unwilling to check the advance of these new powers in most cases.

Faculty Sponsor: Caroline Nordlund

Krista Miller
“I’m Hungry for Wax Fruit”: An Exploration of the Non-Sequitur’s Communicative Value

“I haven’t received that package.” “Smell my hands!” The non-sequitur, Latin for “that which does not follow”, is an absurd response to a comment. It is ambiguous because its intention can be interpreted in multiple ways. Is it simply ridiculous or can it be used to communicate something? This research will examine some factors that may influence how an individual perceives the communicative value of a non-sequitur comment and how effective the speaker is in conveying his intention. Factors to be explored include: level of absurdity, length of pause between the two comments, and personality traits of the non-sequitur speaker.

Faculty Sponsor: Matthew Kelley

Tatiana Moore ’12; Highland Park, Illinois
Chicago Teens vs. Suburban Teens: Is There a Difference?

This presentation is based on a film documentary project I initiated in my First-Year Studies class. The film investigates the similarities and differences between Chicago and suburban teenagers through interviews with teenagers and adults. My documentary includes clips of visual interviews, music, and pictures. It offers some eye-opening insight into the thoughts of teenagers, how the location of their home affects them, and how others perceive them.

Faculty Sponsor: Les Dlabay
Nicole Murphy '10; Philadelphia, Pennsylvania; Physics
Pulsed NMR
Marlan Scully’s group at Texas A&M University recently made theoretical predictions that there would be unexpectedly large transition probabilities for off-resonance exciting pulses of only a few cycles. This behavior is predicted for true, two-level systems and it is our intention to use a pulsed NMR to study the predicted behavior in the two-level system of protons in a magnetic field. This presentation will show the progress of building an NMR system that is sensitive enough to test, and possibly prove, this important theory.
Faculty Sponsor: Bailey Donnally

Nicole Nodi '09; Chicago, Illinois; English
A Work in Translation
There are many great works that were not written in English, so many works that without literary translators, they would be largely inaccessible: Homer’s Iliad, Virgil’s Aeneid, Dante’s Divine Comedy, Chaucer’s Canterbury Tales, and the list goes on. Yet, we often take the work of a literary translator for granted. In my Spanish Poetry Translation tutorial, I have been working with Professor David George to learn how to balance transliteration, interpretation, and creative writing. By sharing the process by which I translated Pablo Neruda’s “Walking around,” I plan to illuminate the important and arduous work of a literary translator.
Faculty Sponsor: David George

Jillian Olejnik '09; Rockford, Illinois; Biology
Follow the Leader: Effects of Female Responsiveness on Mate-Choice Copying
Darwin suggested two mechanisms for sexual selection: intrasexual competition, in which males compete with one another, and the more socially influenced female choice. My experiment uses guppies to take a closer look at the social factors affecting female mate-choice copying, when the presence of a “model” female near a male makes him more attractive to other females. I studied the effects of model female responsiveness to male courtship behaviors. I found that when females are shown two model female/male pairings, they prefer the male paired with the more responsive female. Therefore, female responsiveness is an additional factor influencing mate-choice copying.
Faculty Sponsor: Anne Houde

Jillian Olejnik '09; Rockford, Illinois; Biology
Sea Lions, Penguins, and Fish, Oh My!
During the Fall 2008 semester, I was a Marine Mammals Volunteer at John G. Shedd Aquarium. Each week, I spent one full 10-hour day at the aquarium helping the interns and trainers care for the penguins and sea lion. I learned a lot about the animals’ diets as well as their needs within an aquarium setting. Most exciting were the animal training sessions I got to observe and even frequently take part in. I also got to see what it would be like to be an animal husbandry trainer on a daily basis.
Faculty Sponsor: Lynn Westley

Stacey Parrott
Disparate Effects of Aging on Visual Search Tasks
The present study explored the disparate effects of age in visual search tasks and provides an extensive literature review as well as a replication experiment. Many researchers suggest that older adults may perform poorly on visual search tasks because of age-related memory impairment, while others argue that general slowing or attentional deficits are to blame. The project provides a critical analysis of the evidence for these various explanations. In the replication study, college students performed a visual search task (i.e., feature or conjunctive) and yielded data that are consistent with the stages delineated by Treisman’s Feature Integration Theory.
Faculty Sponsor: Matthew Kelley

Ashleigh Pembroke '09; Valley View, Texas; Art History
Celtic to Catholic: Art of the Irish Conversion
Using formal, literary, and archaeological analysis to examine the use of the number three in Pre-Christian and post-Christian art created in Ireland, found that the symbolism of the number three and designs that were based around it persisted well into the Medieval period. The continuity of visual symbols implies that the iconography of the early Irish Christians maintained much Pagan symbolism and that this symbolism imbued the new Christian religion, providing significance for the early converts. The presentation will follow the transmutation of these forms from their origins in myth and stone carvings to their use in Christian art, highlighting their unchanging status.
Faculty Sponsor: Ann Roberts

Ava Phisuthikul
Exploring the Methods and Processes Behind the Chicago Patient Navigation Research Program
The Chicago Patient Navigation Research Program aims to improve the timeliness of diagnostic resolution, and if applicable, treatment initiation for underserved patients with an abnormal screen of the breast, cervix, or prostate. Recently, patient navigation programs have grown in both popularity and demand. Little information exists concerning the processes and methods used to implement these programs, however. My research fills this void in the form of qualitative interviews I have conducted with patient navigators in Chicago. It provides a comprehensive overview of the scope of work of Chicago patient navigators and describes the methods used by them to implement the program in the Chicago VA hospital.
Faculty Sponsor: Kathryn Dobrmann
Emily Pospiech '09; Hawthorn Woods, Illinois; Chemistry
Substituent Effects of Aryl Halides in the Sonogashira Reaction
The Sonogashira Reaction is a powerful synthetic tool in organic chemistry that allows for the formation of carbon-carbon bonds using alkynes and halogenated aryl substrates as reagents in a palladium catalyzed reaction. For substituted aryl halides, the substituents can introduce electronic effects into the aromatic system that influence reactivity. To examine the effects of various electron donating and electron withdrawing groups, a competitive reaction between iodobenzene and meta- or para- substituted aryl iodides was used to compare relative reaction rates. Using the Hammett relationship, the electronic effects were correlated with the relative rates obtained to examine the reaction mechanism.
Faculty Sponsor: William B. Martin

Melanie Quall '09; International Relations
Bolsa Família: Focalized Policies for Poverty Alleviation in Brazil
Brazil's Bolsa Família is the world's largest conditional cash transfer program. This program is a prominent example of the “social safety net” policies that the World Bank and other international organizations have been eager to support. Countries such as Mexico, Colombia, and Nicaragua have also adopted similar initiatives. Brazil’s Bolsa Família is supposedly designed to improve the conditions for their nation’s poor. Paradoxically, in the current political system, Bolsa Família has been manipulated for electoral purposes, and the deteriorating quality of the educational and healthcare services to which the 11 million beneficiaries of the program have access is not being addressed.
Faculty Sponsor: Paul Orogun

Deepika Ramachandran
ROSCAs—One Small Loan Can Make a Difference
Access to basic financial services among the more than 4 billion people in the world today who live on $2 or less a day is vital to eradicating poverty. In most developing countries, banks and other traditional financial services enterprises are not typically available to the extreme poor. Rotating Savings and Credit Associations (ROSCAs) have emerged recently to fill this void. Sometimes called “the poor man’s bank,” ROSCAs are comprised of groups of individuals who for fixed periods of time, collectively save and borrow. Micro-financing schemes of this sort operate under a variety of names in Africa, Asia, and Latin America.
Faculty Sponsor: Les Dlabay

Katie Rice ’09; Centennial, Colorado; Chemistry
Synthesis of New Molecules in Ionic Liquids
New technology is driven by the synthesis of new materials. In order to understand the properties and application of these new materials, they first must be made in the laboratory. Expanding on recent results with nickel, phosphorous, and sulfur that yielded the completely new salt [EMIM],Ni,P,5,S,30, we explored reactions in the ionic liquid, [EMIM][BF,]. More recently, we have begun to explore reactions of nickel, sulfur, and antimony (a cousin of phosphorous) in a different ionic liquid, 1-ethyl-3-methylimidazolium methyl sulfate.
Faculty Sponsor: Jason Cody

Jeni Roberts ’10; Buffalo Grove, Illinois; Economics
Inauguration Speeches
Inaugural addresses are an important ritual for an incoming President. They are memorable to the American public because in them the President can show that he will protect their shared principles and because the words can transcend time. Ronald Reagan and Barack Obama delivered strong inaugural addresses, yet Ronald Reagan’s inaugural address was ultimately more successful because it is memorable and can be a morale boost for America in hard times like today. Barack Obama’s speech failed to be timeless and his words did not ensue confidence like Ronald Reagan’s.
Faculty Sponsor: Caroline Nordlund

Amy Runyon ’09; Richmond, Indiana; Art History
A Voice of Dissent: Kathe Kollwitz’s Work During Nazi Rule
This thesis explores the conditions under which Twentieth century German printmaker and sculptor, Kathe Kollwitz, persisted in her work as a pacifist artist under Nazi rule. As the Nazis repressed the arts, Kollwitz took solace in the writings of Johann Wolfgang von Goethe. The phrase from one of his books, “seed for the planting must not be ground,” inspired Kollwitz as she created a well known and influential print in 1942, the culmination of a lifelong fight for peace and social justice. Kollwitz’s work continues to resonate with viewers today who question the conceptions of war and social structure.
Faculty Sponsor: Ann Roberts

Rachiny Samek ’12; East Lansing, Michigan; Philosophy
William Inge: Redefinition of Masculinity and Femininity
An eminent American playwright, William Inge, wrote many significant plays, such as Picnic and Bus Stop. The majority of Inge’s plays are set in either the 1920s or the 1950s, particularly in small Midwestern towns. Notorious for reacting slowly to change, the Midwest serves as a contrasting setting for Inge’s plays as he attempts to explore and redefine the meaning of masculinity and femininity. Through the regional location of his characters and the time period of the play, Inge creates new identities for his characters, constantly shifting any of the reader’s preconceived notions of the established gender stereotypes.
Faculty Sponsor: Benjamin Goluboff

Jenna Sasanfar ’09
International Relations, Latin American Studies
Transnational Advocacy Networks and Human Trafficking
This project applies the model of the Transnational Advocacy Network (TAN) to global human trafficking. The model identifies a particular causal mechanism in international relations by which non-state actors, working across national boundaries with select states and intergovernmental organizations, forge new global movements to advance controversial international policy initiatives. My research studies the activities of Not for Sale, a transnational group committed to ending human trafficking worldwide, and considers whether this group’s campaign—as played out in countries around the world—can be explained by the model’s basic predictions about how transnational networks are formed, operate, and advance their policy agendas.
Faculty Sponsor: James Marquardt
Melissa Schramm '09; Gurnee, Illinois; Biology
Playing Your Cards Right: How Guppies, *Poecilia reticulata*, Alter Their Courtship Tactics in Varying Social Environments

This study examined whether or not guppies, *Poecilia reticulata*, vary their courtship behaviors upon encountering different social environments, a potentially valuable adaptation. I found that male’s increased their courtship display rate in a social environment in which other males were present, increased “sneak” copulation attempts in all-male and all-female environments, and decreased courtship behaviors after first introduction to a female. Virgin females were more sexually responsive in a social environment with other individuals than when alone with a focal male. These results suggest that guppies may improve mating success by adjusting their courtship tactics in different social environments.

*Faculty Sponsor: Anne Houde*

Tracy Schwartz '10; Elk River, Idaho; Communication, Politics
Washington Highlands: The Other D.C.’s Diamond in the Rough

The best views of Washington, D. C. are east of the Anacostia River in the community of Washington Highlands. This neighborhood offers the most splendid views of the monuments and museums. It is also home to some of the highest crime, teenage pregnancy, and poverty rates in the city. Out of sight and out of mind, this old dumping ground for public housing is gentrifying and therefore serves as a lesson to community developers and politicians. Washington Highlands can have a bright future. For all the bad in the community there is still the promise of much good.

*Faculty Sponsor: Caroline Nordlund*

Leah Scull '09; Newport News, Virginia
English, Environmental Studies
Class Division within the American Environmental Movement

Is there a class effect on the concern for environmental quality? In general, members of the urban working class show the same amount of concern for environmental problems as the affluent class, and it is the issues the two classes rally around that marks their difference in concern for environmental quality. An examination of the American environmental movement since the 1970s shows a split in the environmental movement among class lines, with a merger in more recent years around the issues of global warming and energy diversification.

*Faculty Sponsor: Benjamin Goluboff*

Gabriela Siszer '09, Chemistry
Expression of Cancer Vaccines in Suicidal *Leishmania* for Immunotherapy

*Leishmania* is a protozoan that naturally infects antigen-presenting cells. Because it is defective in heme biosynthesis, heme must be acquired from the parasite’s host. Transfection of the wild type *Leishmania* with enzymes needed in heme biosynthesis stimulates formation of uroporphyrins that make the parasite sensitive to light. Light exposure results in the production of free radicals that will kill the parasite. When uroporphyrinic *Leishmania* is transfected with any antigen, the antigen is processed for immunological presentation. Five genes encoding melanoma antigens were transfected into *Leishmania* and the expression of the genes were assessed by active PCR and Western Blot.

*Faculty Sponsor: Lynn Westley*

Hadley Skeffington-Vos '10; Minburn, Iowa
French, International Relations
Recognizing Stereotypes and Becoming a Global Citizen

My Symposium presentation discusses cultural stereotypes of Europeans and how awareness of cultural ‘otherness’ can help us to become global citizens. I will draw stereotypes from student surveys and dialogues, focusing on the three countries in which I studied abroad: Greece, Switzerland, and France. First, I will discuss the typical American stereotypes of these countries, what I discovered about the people and culture of each country through my studies and personal experiences, and how this differs/confirms the cultural stereotype. I will conclude with how an awareness of cultural stereotypes when abroad can help overcome the barriers of cultural difference.

*Faculty Sponsor: Janet Miller*

Kelly Smith '11; Sociology/Anthropology
Sexuality and Context: Negotiating a Shifting Self

How much of your personality do you show in society? What about when part of your identity is regarded as deviant in some sectors of society? Each of us know our whole self, but in front of society we show different portions. Because of the stigma produced by non-heteronormativity, queer people learn strategies for navigating situations in which they are regarded as scary, wrong, or dangerous. This paper explores the cases of the Stonewall Riots, Matthew Shepard, and California's Proposition 8 as events, which have altered what constitutes “queer safe” environments and affected how queer people manage their identities.

*Faculty Sponsor: Holly Swyers*
Amy Stout '09; Littleton, Colorado
Communication, Independent Scholar
Exploring Life through the Lens of Death
As the formerly taboo subject of death becomes more prevalent in the public sphere through media such as television, lectures, books and museum exhibits, our society’s view and understanding of what it means to live and die has evolved. Conversely, it appears the subject of death still has taboo facets within the private sphere. Using Goodnight’s sphere theory to shed light on this death controversy, this presentation explores the subject of death within each of the three spheres (public, private, and technical) and its role in finding the meaning of life.
Faculty Sponsor: Rachel Whidden

Natalie Talbert '10; Grand Rapids, Michigan
Psychology, Spanish
Finding Myself in Costa Rica: Outcomes of the Study Abroad Experience
Having returned from a semester in Costa Rica, I have reflected on the positive outcomes of my experience. My awareness of cultural diversity increased, but I also grew personally. I became more confident and independent, and I learned the importance of making time for friendships in addition to academics. I have applied these new lessons to my life here at Lake Forest, and this semester has been my best so far. Because study abroad removes a student from his/her cultural context, it is a unique opportunity for personal growth and a valuable part of the educational experience.
Faculty Sponsor: Janet Miller

Daniel Tietzer
What is Special about 3, 5, 7, ..., 6, 10, 14, ...12, 20, 28, ...8, 4, 2, 1?
After introducing the ideas of function iteration, fixed points and periodic orbits, we state and illustrate Sarkovskii’s Theorem. This surprising theorem furnishes wide-ranging results in the categorization of orbits for functions on the real line and has exciting implication for Chaos Theory (alias Dynamical Systems). We then apply basic results from calculus to sketch a proof of the theorem. The proof offers interesting insights into the relationships between even and odd numbers and the complexity of nonlinear systems. The simplicity of the theorem and the subtlety of its proof make Sarkovskii’s Theorem arguably one of the most beautiful and elegant results of the twentieth century.
Faculty Sponsor: Edward Packel

Chris Tossing ’09, Biology and Chemistry
Speciation: The Genetics Responsible for Intrinsic Post-Zygotic Isolation
Intrinsic post-zygotic isolation (sterility or inviability of hybrids between two species) is an intriguing, yet complex component of speciation. While the effects of post-zygotic isolation have been observed for years, the direct cause has remained unclear. However, advances in modern genetics have been able to elucidate some of the questions surrounding both the cause and function of post-zygotic isolation. By using Drosophila as the ideal model researchers have been able to characterize and identify genes that may be responsible for both the hybrid sterility and inviability associated with this type of isolation.
Faculty Sponsor: Anne Houde

Craig Valstad '11
Epic Theatre: An Exploration into the Defamiliarization Techniques of Bertolt Brecht
In the early to mid-20th century, German theorist, playwright, and director Bertolt Brecht pioneered a new movement in theatre often referred to as Epic Theatre (although Brecht preferred the term “dialectical theatre”). Brecht rejected the naturalistic approach of his predecessors and instead sought to utilize theatre as a means of social reform. In order to accomplish these goals, Brecht employed his theory of Verfremdungseffekt, or the distancing effect. By preventing the audience from being immersed in the spectacle of the theatre and the characters created on stage, audiences were forced to become conscientious critical observers.
Faculty Sponsor: D. Ohlandt

Daysi Vargas '11; Panama; Biology (Pre-Health), Economics
The telomere is a nucleoprotein complex that caps and protects the chromosome ends of eukaryotic organisms. Previous research shows that cells with high replicative capacity, such as germ cells, have longer telomeres than those of somatic cells. In our laboratory, PCR has been used to measure the telomere length of *Aspergillus nidulans*, a filamentous fungus. We hypothesize that the telomeres of the germ cells, or ascospores, of *A. nidulans* are longer than those of somatic cells. I have tried opening the ascospores using physical and enzymatic approaches and I will use PCR on the DNA to determine the telomere length.
Faculty Sponsor: Karen Kirk
Like many post-colonial African nations, Chad is an artificially created cluster of ethnic groups. The interests of those groups are not necessarily congruent, which is detrimental to state stability when only a handful of groups are represented in government. Ethnic factions are especially problematic in this case because Chad has been fought over by external powers since independence. Between pan-Islam movements and disputes over oil revenue, the Chadian government has been unable to establish sufficient control over the nation.

Faculty Sponsor: Paul Orogun
Sadaf Ahmad '09
Rebecca M. Brezinsky '11
Clare C. Conlisk '10
Elina Dilmukhametova '09
Jessica Disch '09
Susan Hedrick '09
Rebecca C. Krebs '09
Max Meltser '09
Terese E. Noe '10
Alejandra Rodriguez '09
Laura Thilgen '09
Natalia C. Wilkins '11

150 Years of Studying Evolution
Through the collective efforts of TriBeta and the Spring 2009 Biology Senior Seminar, this exhibit celebrates the 200th birthday of Charles Darwin and the 50th anniversary of the publication of his monumental and world-view changing book, *The Origin of Species*. On exhibit will be skulls of human ancestors, other biological specimens and the ideas of evolution.

*Faculty Sponsor: Anne Houde*

Kumiko Akiyama
Basak Cavus
Bita Dadfar
Timila Dhakwa
Tenzin Dolkar
Yuu Imai
Thandeka Mabuza
Deepika Ramachandran; Mumbai, India
Irene Baba Ruiz
Kavita Seshan
Bia Siddiqui
Mona Sobhani
Michelle Stroner
Kelebogile Tlhokwane
Toni Velikova
Jennillee Wallace
Patricia Zumwalt

International Dance Club
International Dance Club is an open group that aims to promote cultural diversity, integration, and awareness through dancing. Since we are now an established group, we are determined to work towards our main objective – to raise money for philanthropic organizations such as invisible children.

Bushra Alam '10; Dhaka, Bangladesh; Economics, Physics
Max Falaleyev '09; Marina, California
Asian Studies, Economics
Flora Lujana '09; Nairobi, Kenya; Economics
Dawson Nodurft '10; Plato Center, Illinois; Economics, Physics

China: Coal or Be Dammed?
China is one of the fastest developing economies of the world. To sustain this economic growth, the country needs unprecedented amounts of energy. Does it burn coal until it runs out or are there other viable economic, yet environmentally friendly, alternatives? Recently, China built one of the world’s largest hydro-electric dams as an environmentally sound source for long-term mass energy. But, this project has already been cited for problems and even accused of causing an earthquake. In a land of 1.3 billion people, is such an approach sustainable or are there hazards waiting to happen? Come and see.

*Faculty Sponsor: George Seyk*

Bushra Alam '10; Dhaka, Bangladesh; Economics, Physics
Roshnika Fernando, Physics
Kosova Kreka '12
Thandeka Mabuza '12
Timothy McNamee '09
Nicole Murphy '10
Dawson Nodurft '10

Let’s Get Physical
The physical world is full of phenomena. Through demonstrations of experiments, we would like to welcome, and in some cases introduce, everyone to the many wonders of the physical world. What seems impossible we can explained by physics. Demonstrations will defy gravity with spontaneously jumping rings, superconducting trains, and a walk on “water.” We will explain the physics behind shooting a target through projectile motion, the manipulation of pressure, and much more. Our goal is to qualitatively explain physics in a friendly environment because physics is fun!

*Faculty Sponsor: Nathan Mueggenburg*
Responsibility in the Marketplace: Implications of the Coalition of Immokalee Workers Campaigns

Students in the Ethics Center research course will report on their investigation of the Coalition of Immokalee Workers’ efforts to improve wages and working conditions for farmworkers. The CIW has organized campaigns targeting fast food corporations (e.g., McDonalds, Burger King, and Taco Bell), seeking an extra ‘penny per pound’ for tomatoes purchased from Florida growers. These campaigns suggest an expansion of the ethical dimension of market decisions. Students have focused on the debates over (1) a corporate responsibility to improve the conditions for employees of suppliers and (2) a responsibility of consumers to consider social issues in purchasing decisions.

Faculty Sponsor: Lou Lombardi

Eukaryon: A 5 Year Review

Eukaryon is a student-produced scientific journal from Lake Forest College. Each year, we publish a range of student scholarship by accepting articles from First-Year Studies course up to senior theses. Eukaryon consists of three boards. The Review Board reads each article and accepts or rejects them. The Copy-Editing Board corrects grammatical errors. The Publishing Board formats the articles for print and online versions. In addition to the journal, Eukaryon has a more broad impact on the biology department. We have recently conducted an assessment to determine our influence on the Lake Forest College biology community.

Faculty Sponsor: Pliny Smith

China Through Student Eyes

In the spring of 2008, a group of Lake Forest students traveled to China. The three-week trip took place at a crucial juncture in the country’s modern history. In May, a major earthquake devastated southern Sichuan province, killing nearly 70,000, injuring many more, and leaving millions homeless. Several months later, Beijing played host to its first ever Summer Olympic Games. We present a film and a slide show of pictures of our experiences in China for the purpose of enhancing awareness about China today to the College community.

Faculty Sponsor: Shiwei Chen

Beyond the Jersey: My Life as a Lake Forest College Student-Athlete

Through the eyes of the student-athletes themselves, this panel will take a look at the student behind the jersey… Why did they choose Lake Forest College? What drives them? What role do they play on campus? How do they balance being a student and an athlete? and What does this balancing act teach them? These questions, among many others, will be answered in this informative panel discussion.

Faculty Sponsor: Cheryl Behnke

Einstein on the Run

In this session, three students—with majors in biology and Spanish, communication, and religion—present research on Educational Studies topics that have particular relevance to each of them. With the advent of the new Educational Studies minor and new course offerings in the Education Department, students such as those presenting in this session have been able to pursue interests and issues that resonate with ongoing debates surrounding the world of education today outside of teacher certification. These presentations also highlight the importance of including Educational Studies within the framework of a liberal arts curriculum.

Faculty Sponsors: Shelley Sherman and Victoria Trinder
Danielle G. Bodenheimer  
Michelle J. Everst  
Victoria Flores  
Niharika Jain  
Peri Kepraio  
Jerrica L. Krzywicki  
Kamil Madejski  
Samantha C. Parkison  
Rachiny S. Samek  
Sarah K. Spoto  
Chelsea A. Yannello  

**Art Club Presents CHANGE**

Change. Regression and progression. Diffuse. Metamorphosis. Modification. Alteration. Becoming one thing where before there was another. How can change, dynamic and constant, be captured? Art Club will endeavor to answer this question through the presentation of the art pieces based on the ambiguous, but often personal, concept.

*Faculty Sponsor: Eli Robb*

Rebecca Brezinsky ’11  
Danielle Clark ’09  
Shaun Davis ’09  
Timila Dhakhwa ’10  
Julian McLain ’11  
Emily Pospiech ’09  
Saajidha Rizvedeen ’12  
Quincy Roberts ’09  
Madhavi Senagolage ’12  
Mona Sobhani ’10  
Chris Tossing ’09  
Ali Vetter ’10  
Zawadowicz ’12  
Xiaoyu Zhu ’12

**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 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. Those in attendance will also be invited to join in a hands-on demonstration to make their very own “slime.”

*Faculty Sponsor: Elizabeth W. Fischer*

Daniella Brutman ’12; Vernon Hills, Illinois; Biology  
Grace Dudliceck-Bright ’12; Orland Park, Illinois; Undecided  
Andrew Glass ’12; Colorado Springs, Colorado; Undecided  
Natasha Pouloupolous ’12; Northbrook, Illinois; Undecided  
Naeem Walji ’12; Mercer Island, Washington; Undecided

**FIYS 106: Medical Mysteries: Drugs and the Brain**

This collaborative group project was done for 2008 Brain Awareness Week. We educated the campus community on how the brain interacts with drugs to produce normal behavior or cause dysfunction. Our group researched the effects of natural chemicals, toxins, prescription drugs, and addictive drugs on human brain function, with a focus on current medical mysteries. We conveyed our information through not only posters, short lectures, and an anatomy exhibit in a public lab, but also pamphlets, three dimensional models, and an inebriation simulation activity. At the Symposium, we will reproduce our campus outreach, primarily by discussing our posters.

*Faculty Sponsor: Shubhik DebBurman*

Alaina Carlson; Racine, Wisconsin  
Emily Hilgenberg; Bloomingdale, Illinois  
Brian Kedzorski  
Matt Kistler; Crystal Lake, Illinois  
Michael Knish; Laporte, Indiana  
John Termaat; Naperville, Illinois  
Cole Thornton; Fresno, California

**New and Experimental Music Group: Videogame interface in music making**

The Experimental Music Group will perform new music using video game hardware and software (the Nintendo DS and Nintendo Wii remote controls) as a tool for improvisation. The performance will include audience members to demonstrate the ease of making interesting music with these tools.

*Faculty Sponsor: Donald Meyer*

Ray Choi  
Alina Konnikova

**Autophagy’s Role as a Possible Cure for Parkinson’s Disease**

Parkinson disease (PD), an incurable neurodegenerative disease, results from the loss of select dopaminergic neurons in the substantia nigra. The misfolding and aggregation of the protein alpha-synuclein is the likely cause of PD. A popular hypothesis is that increasing the degradation of alpha-synuclein may protect the cell from its toxicity and aggregation. We tested the hypothesis that autophagy protects cells from alpha-synuclein toxicity. Autophagy is an ancient self cannabilizing process that cells use to get rid of old, damaged, or toxic parts. Our ongoing analysis suggests that autophagy regulates some alpha-synuclein properties, while its effect on toxicity appears minimal.

*Faculty Sponsor: Shubhik DebBurman*
Richard Widmark: From Lake Forest College to Hollywood

This Symposium presentation will focus on the research completed by the fall 2008 Richard Widmark Practicum. The presentation will discuss Lake Forest College alumnus Richard Widmark's life and Hollywood career based on information found in the archives, alumni files, and other sources. The presentation will consist of a panel discussion by the five students from the class and a screening of the class's culminating project: a student-made documentary recounting the life and acting career of Richard Widmark, including his years at Lake Forest College.

Faculty Sponsor: Leslie Abramson

Mura Dominko; Psychology
William Stoner

The Influence of Subliminal Priming on Behavior

Past research has shown that subliminal priming can have an effect on attitudes and later produce overt behavior. The present study examined the influence of subliminal priming on behavior by attempting to replicate and extend previous research. Using a sentence unscrambling task, participants were exposed to stereotypic words from one of three categories (thirsty, young, or elderly). Based on previous research, we predicted that the elderly words would promote slower walking after the experiment and thirsty words would prompt people to take and open a complimentary beverage. Results and implications will be discussed.

Faculty Sponsor: Matthew Kelley

Grace Dunford ’09; Los Alton, CA; Biology, Music
Jin-Houn “L” Jou ’10, Wynnewood, PA; Music
Natalie Molina ’09; Las Vegas, NV; Music
Phuc Phan ’09; Hanoi, Vietnam; Education, French
Nate Rhodes ’09; Okemos, MI; Polities
Sun Wenlu ’11; Beijing, China; Chemistry
Joe Yeo ’10; Skokie, IL; Spanish, Music
Xiaoyu Yin ’11; Shanghai, China; Mathematics

Music Recital

A performance of students taking music lessons during the 2008-09 academic year, including piano, flute, violin, cello, and other instruments.

Faculty Sponsor: Donald Meyer

James Dunnigan ’12
Morgan Easter ’09, International Relations
Virginia Gravewy ’10
Mayely Imhoff ’12; Bremen, Germany; International Relations
Polina Nozdrina-Plotnizkaya ’09, International Relations
Ioana Sirca ’11
Fabrizio Sordoni ’11

Model United Nations—Global players

The Lake Forest College Model United Nations team would like to share its experiences with students and faculty. We would like to give a short presentation about the conference we attended last semester as well as a information on the UN and her bodies, give a demonstration of how the UN as well as Model UN sessions work; their purpose, rules, procedures and successes. Moreover, we would like to invite our audience to participate in the debate and thus get a first-hand experience and furthermore information on the topic of debate.

Faculty Sponsor: James Marquardt

Aleksa Dutko
Anne Nicholson

Austin Stewart ’10; Edmond, Oklahoma; Religion

The Threat of Fundamentalism

The threat of religious fundamentalism is real. Fundamentalism is extremely inimical to dialogue because of its three basic characteristics; it is static, selective, and simple. Fundamentalism is static because it does not take history seriously, selective because it uses only certain texts, and simplistic because it sees those texts through a black/white lens. Furthermore, forms of fundamentalism exist at different levels — one more dangerous than the other. The religious fundamentalist's mindset does nothing but increase the chances for conflict and widespread ignorance in the United States and in the world.

Faculty Sponsor: Ronald Miller

Samantha Eckerling ’10; Denver, Colorado; Education, Spanish
Kayla Lord ’10; Waukegan, Illinois; Education, Theater
Charice Wilczynski ’10; Long Grove, Illinois Education, History

Bringing the Community into the Classroom: Real-world Learning for Young Children

Student interns in Waukegan schools are developing meaningful projects for their students using information about the Waukegan community and its students' families and cultures. They are building curriculum around their students' lives, drawing from liberal arts experiences in politics, history, economics, theater, and Spanish. This model differs from traditional curriculum that requires all students to be learning the same content; it also assumes sophisticated disciplines can be taught to young children in developmentally appropriate ways. Presenters will discuss their journeys as beginning teachers who strive to motivate young students, build literacy skills, and engage students in rich content area learning.

Faculty Sponsor: Shelley Sherman
Allison Falls ’10; Elmhurst, Illinois; Psychology
Alex Pirrotta ’10; Manchester, Massachusetts; Psychology

The Effect of Racial Markers on Perception: Can a Single Racial Marker Alter the Perceived Race, Personality, and Facial Features of Two Otherwise Identical Faces?

This study examines the extent to which the perceived race of a person affects perceptions of that person's physical and personality traits. Pairs of computer-generated ambiguous-race faces, which differed only in hairstyle, were displayed on a computer screen, one at a time. Participants rated the race, personality, and physical features of each face. Results showed that a single stereotypical racial marker (hair style) can change the racial classification of a face (from African American to White), and this classification impacts both perceptions of facial features and inferences about personality. Practical and theoretical implications will be discussed.

Faculty Sponsor: Nancy Brekke

Colby Friedeman ’10; Lake Forest, Illinois, Business
Aaron Salman ’09; Santa Fe, New Mexico; Business

The Economic Stimulus Program and Its Potential Effects on the Navajo Nation

“The Navajo people's wealth is not measured by its savings or retirement account, but what's in their sheep corral or held in a bordertown pawn shop.”
- Navajo Nation President Joe Shirley, Jr.

Surrounded by the booming economies of the Southwest, the Navajo Nation has deteriorated into third-world conditions with unemployment around 50 percent. Struggling to develop its economy and infrastructure while providing for its people's needs, the Navajo have become part of the recent U.S. Economic Stimulus Program. Learn about the Navajo and what possible effects the expected $2.9 billion in federal aid may have for their future.

Faculty Sponsor: George Seyk

Dina Froustis ’11; Biology
Michael Orrison ’10; Biology
Hoyt Rees ’10; Biology

Biodiversity in the Shooting Star Savannah

Measuring the diversity, species richness, and distribution of a community can provide insight on environmental impacts and species interactions. Sampling and measurement of the biodiversity of the Shooting Star Savannah was done using the Shannon-Weiner Index. Sampling occurred from the edge of the meadow, located near a road, progressively changing into a forested environment. The results show an uneven distribution and diversity of species. Human impact had the largest effect on diversity, resulting in a considerable difference in the composition of the species found in these areas. Larger, K-selected organisms develop with wide variety in areas with low human impact.

Faculty Sponsor: Terry Gates

Penina T. Green ’10
David Konefal ’10; Mundelein, Illinois; Biology, Chemistry
Eliot Vildaver ’10, Chemistry

Species Composition and Biodiversity in the Meadows of Lake Forest, Illinois

Species composition and biodiversity are essential in order to understand the intricacies of any ecosystem. We collected diversity data on various plant species within the Ravine Forest of Lake Forest, Illinois through two different methods: ten separate square meter plots and one collective 100 square meter plot. We demonstrated that sample area directly impacts biodiversity measures. The separate plots’ cumulative H' (a measure of diversity) was nearly double that of the single, larger plot. This implies that there are ecological limitations for species’ ability to diversify and that the use of larger sample areas is the ideal methodology for attaining an ecosystem's species composition.

Faculty Sponsor: Terry Gates

Timothy Hacker ’09
Fiorella Lopez ’12
Austin Stewart ’10; Edmond, Oklahoma; French, Religion

Other Religions: Competitors or Allies?

The world we live in contains a variety of religions, but are they meant to cooperate or compete, be adversaries or allies? This panel will discuss three basic ways of looking at “other religions.” Exclusivism argues that if my religion is right, yours is wrong. Inclusivism concedes that your religion may contain some truth but mine is best. Pluralism operates on the hypothesis that your religion does for you what mine does for me. How can these three approaches live on one planet? How can their proponents dialogue with one another?

Faculty Sponsor: Ronald Miller

Whitney Hales ’11, Environmental Studies
Robert (Bobby) Hodges ’10, Biology
Marty LaBelle ’11; Chicago, Illinois; Chemistry

An Inquiry into the Biodiversity of a Ravine Forest

Biodiversity is declining across the globe as pollution levels rise and climates continue to shift. To demonstrate how subtle changes in the environment can alter the biodiversity of an area, this study sampled plots across a ravine-forest environment. By observing the total number of different species, along with how many individuals of each species were found within a plot, we calculated the Shannon-Weiner Index as a measure of species richness within each plot. This study demonstrated how varying sampling methods, as well as different environments, can affect biodiversity.

Faculty Sponsor: Terry Gates
Brain Awareness Week at Lake Forest College is dedicated to educating the public about the anatomy and functions of the human brain. As students of FIYS 106 Medical Mysteries: Neuroscience in Chicago, we researched the brain biology and dysfunctions of sleep. We presented our findings to the public through informational posters, pamphlets, interactive activities, and a human brain anatomy lab. We will reproduce this outreach at the Symposium by discussing how specific brain regions regulate sleep, dreams, circadian rhythm, and sleep-wake cycles. Additionally we will explain the malfunctions that arise from these regions and lead to complex disorders.

Faculty Sponsor: Shubhik DebBurman

Is Beauty Only Skin Deep? The Relationship Between Personality and Attractiveness Ratings

The present study examined whether positive and negative personality traits influenced attractiveness ratings for pictures of men and women. In phase one, 52 participants rated 80 photographs of men and women solely on their attractiveness. Two to four days later, the same participants were asked to learn and remember four personality descriptions paired with four photos from phase one. Following the learning task, participants were given a surprise attractiveness rating task. When positive personality traits were paired with the photos, attractiveness ratings increased significantly for both attractive and unattractive pictures; whereas, attractiveness ratings remained stable in the negative trait condition.

Faculty Sponsor: Matthew Kelley

Aikido

Morehei Ueshiba, the creator of Aikido, once said, “To control aggression without inflicting injury is the art of peace.” Fueled by this philosophy, he created a martial art which focuses on blending with the energy of an attacker. Rather than fight force with force, Aikido aims to diffuse a situation by accepting an attack and fluidly redirecting its energy to gain control. Aikido relies on a combination of pins and joint locks which are learned through “katas,” or a series of sequential movements. In our presentation, we intend to demonstrate various self-defense techniques for several different attacks.

Faculty Sponsor: Jennifer Saylor
Erika Rodriguez '12; Crystal Lake, Illinois; Psychology
Kristina Rodriguez '12; Crystal Lake, Illinois; Environmental Sciences

Carbon Footprint '09: Starting on the Path to a Carbon-Free Campus

The first step in the process of reducing greenhouse gas emissions at Lake Forest College is to create a thorough inventory of the campus carbon footprint, the sum of all emissions and activities that have an impact on climate. This poster presents current results for the College for the 2009 fiscal year, the process of collecting the necessary data, and guidelines for expanding the inventory in the future. Some potential strategies for reducing emissions in future years will also be presented.

Faculty Sponsor: Lori Del Negro

Natalie Simak '11; Vernon Hills, Illinois; Biology, Psychology
Brittany Stern '11; Kildeer, Illinois; Biology, Chemistry

Pollen Dispersal in Helianthus maximilianii and Potential Implications on Genetic Variation

Sunflowers rely on insects like bees and butterflies to pollinate flowers and to help maintain genetic diversity in populations. We examined pollen flow in a population of sunflowers in Lake Forest, Illinois. The data suggest that the great majority of pollen is distributed in a small range, within an individual flower patch. In a second project, we examined the effect of nectar sucrose concentration on the frequency of pollinator visitation, by augmenting flowers with sugar water. While our findings do not provide definitive results, they suggest that bees may have a preference in which flowers they visit.

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