2007

Website: 2007 Colby College Undergraduate Research Symposium

Colby College

2007 Program

- Keynote Speaker
- Schedule - Wednesday
- Schedule - Thursday
- Schedule - Friday
- Poster Program
- Associated Sessions
- Abstracts
- Honors Program
- Participating Departments/ Programs

Research Symposium

Eighth Annual

Colby Undergraduate Research Symposium

Keynote Speaker

Dr. William Freudenburg

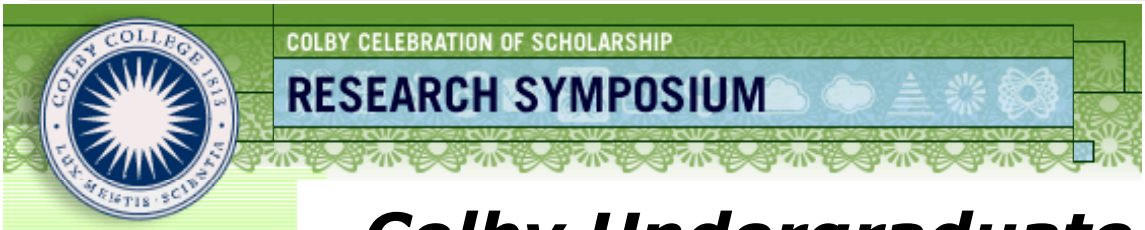
Dehlsen Professor of Environment and Society at the University of California, Santa Barbara

Dr. Freudenburg will give the keynote address for the symposium at **7:30 pm** on **Wednesday, May 2, 2007** in **Olin 1**.

Hell and High Water: Learning the Lessons of Hurricane Katrina

Hurricane Katrina was not just a natural disaster, but an interrelated set of four disasters, three of which were unnatural. First and most evidently, the storm was strong enough to qualify as a significant natural disaster under any circumstances. Second, there were disastrous failures in the systems that were expected to protect New Orleans – including the human "emergency response" systems as well as the physical levees and floodwalls. Third, in a pattern that received less attention in the media, the death and destruction were greatly increased by the ways in which organizations had modified the surrounding environment over the previous half-century. Fourth and finally, the organizational disaster is not yet "over." Instead, decisions and investments being made today may well contribute to serious additional costs, both human and financial, in the future

Dr. Freudenburg has published over 100 peer-reviewed journal articles, books and book chapters on society-environment relationships, with much of the work focusing on resource-dependent rural communities and the sociology of risk. Less well-known is the fact that he has been in Louisiana within a week or two of five named tropical storms, although he has only needed to evacuate once. Aside from being obsessed with Hurricane Katrina, he has recently been doing work that emphasizes relationships between resources and discourses. In particular, he has been focusing on "disproportionality" – the tendency for environmental damage to be associated with a surprisingly small fraction of the overall economy – and on the political and rhetorical tactics that often help the disproportionately harmful activities to go unchallenged.



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May 2-4, Colby College, Waterville, Maine

Keynote Address - *Dr. William Freudenburg*

May 2, 7:30 pm Olin 1

Research Presentations

Wednesday, May 2

Hurd Room
Session Chair: Catherine Besteman

SESSION I: ANTHROPOLOGY
Anthropology

1:00-3:30 PM

1:00 pm **Weather Potdevin ('07)**, Anthropology
The Language of Oil Companies, Politicians and Alaska Native Groups on Drilling for Alaskan Crude Oil and Natural Gases in the Arctic National Wildlife Refuge

1:30 pm **Amanda Hilton ('07)**, Anthropology
The Cultivation of The Body Shop LLC: the Rhetoric and Reality of a 'Fair Trade' Corporation

2:00 pm **Valerie Friedman ('07)**, Anthropology
Reclaiming the Power of Knowledge: How the Internet has Changed the Flow of Information

2:30 pm **Caitlin Gallagher ('07)**, Anthropology
The Influence of Heron's Mechanics on the Role of Temples in Alexandria

Smith Room
Session Chair: David Firmage

SESSION II:
General Session

2:00-5:00

2:00 pm	**Canaan Morse ('07)** 'The Stewardess': Chinese Author Wang Shuo in Translation
2:30 pm	**Christopher Zajchowski ('07)** Themes of Belonging and Indentity in 'Diasporic' Indian Literature
3:00 pm	**Suzanne Merkelson ('09), Sameera Anwar ('10), Joel Biron ('07), Ratul Bhattacharyya ('09) and Christopher Zajchowski ('07)** The Contact Zone: Teaching and Learning in Rural India
3:15 pm	**Isaac Opper ('10)** The Conflict between Montana and Wyoming over Coal Bed Methane Production in the Powder River Basin
3:30 pm	**Mariah Hudnut ('07)** Meaningful Participation: the benefits of climate change policy to Brazil and prospects for the developing world
4:00 pm	**Brian Fulmer ('07)** Political Biology: Peter Kropotkin and the Darwinian Revolution
4:15 pm	**Jennifer Mizen ('08)** Elephant-Bat Interactions: Commensalism at Work?
4:45 pm	**Christine Avena ('08)** A Comparison of Avian Diversity in Pine Plantations and Cloud Forests of the Mazar Reserve, Southern Ecuador

Return to Research Symposium Home Page

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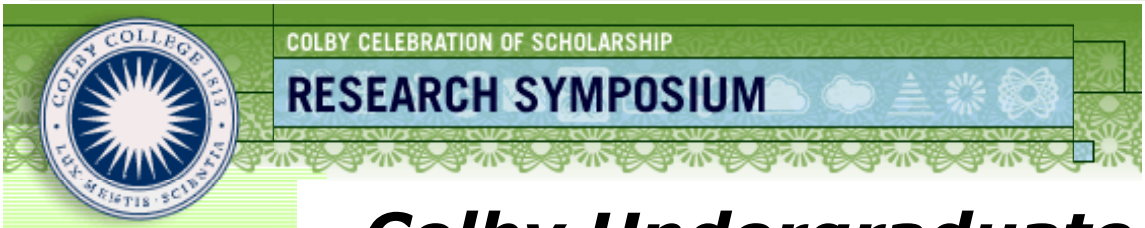

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Research Presentations

Thursday, May 3

SESSION : ECONOMICS
EC 312 Presentations

Diamond 341
Session Chair:
Tom Tietenberg

2:30-3:45

Stephanie Agrimanakis; Discussant: Le
A Closer Look at Free Speech in the Global Context: The Truth Behind Restrictive Advertising

Amy Fredrickson; Discussant: Tutu Mus
The Evolution of Abortion Law in the United States

SESSION III:
Senior Scholars

Hurd Room
Session Chair:
Howard Lupovitch

10:00-11:00 AM

10:00 am **Thomas Reznick ('07)**, Science, Technology, and Society
From the Fair to the Laboratory: Agricultural Science and Education in Aroostook, Maine.

10:30 am **Catherine Downing ('07)**, English
Interlocking Oppressions of Sisterhood: (Re) Presenting the Black Woman in

Nineteenth Century Blackface Minstrelsy

SESSION IV: ENVIRONMENTAL STUDIES
Environmental Studies

Hurd Room
Session Chair:
Tom Tietenberg

1:00-2:00 PM

1:00 pm **Kaitlin Himmelmann ('07)**, Environmental Studies
Endocrine Disrupting Chemicals and Colby's Purchasing Practices

1:30 pm **Renzo Mendoza Castro ('07)**, Environmental Studies
Negotiating the Next Climate Treaty

SESSION V:
General Session

Smith Room
Session Chair:
Julie Millard

1:30-3:00 PM

1:30 pm **Yu-Hwei Chou ('07) and Ian Cross ('07)**, Physics and Astronomy
High Magnetic Field Spectroscopy of Vibrational and Electronic Transitions in NTNB and Other Integer Spin Compounds.

2:00 pm **Roy Wilson ('07)**, Physics and Astronomy
Temperature Control in Ultra Cold Plasmas

2:30 pm **Julian Jacobson ('10)**, Mathematics
The Physics of Perception in Tilt-Translation Models

SESSION VI: BIOLOGY
BI320: Evolutionary Analysis

Arey 205
Session Chair:
Judy Stone

1:00-3:00 PM

Sarah Clark ('08)
Genetic markers reveal excess homozyogosity in two closely-related orchid species

Dan Dewey-Mattia ('08)
Genetic variation in Isotria medeoloides as assessed by Simple Sequence Repeats

Heather Nickerson ('09)
Lack of genetic variation in Isotria verticillata as assessed by Amplified Fragment Length Polymorphism markers

Kristine Robin ('08)
A comparison of geographic and genetic distances among populations of the rare orchid, Isotria medeoloides

Talia Savic ('09)
Comparison of Amplified Fragment Length Polymorphism markers for two closely related orchid species

SESSION VII: GOVERNMENT
Scouting for Grassroots Knowledge: A Global Network

Whitney Room
Session Chair:
Ariel Armony

1:00-2:00 PM

1:00 pm **Class members**, Government
Class presentation

SESSION VIII: BIOLOGY — *Olin 234*
BI392: The Cell Cycle and Cancer — *Session Chair:*
Symposium on Cancer — *Paul Greenwood*

1:00-3:30 pm

Sarah Faasse ('07)
Pediatric soft tissue sarcomas: causes, clinical manifestations, and treatments

Beth Hirschhorn ('07)
Skin cancer

Julie Hike ('07)
The diagnosis, prognosis, treatment, and challenges of pancreatic cancer

Katie Lillehei ('07)
Molecular markers in the classification of gliomas and their implications for treatment

Andrew Herstein ('07)
Chronic myelogenous leukemia: a success story in targeted cancer therapies

Kate Dziedzic ('07)
Downs syndrome and leukemia

David Amadu ('07)
B-lymphocytes gone wild: cell biology, clinical manifestations and treatment of Hodgkin's disease

SESSION IX: HISTORY — *Hurd Room*
WGSS Senior Seminar Presentations — *Session Chair:*
— *Lisa Arellano*

2:00-4:00 PM

2:00 pm **Allison Cole ('07)**, Women, Gender, Sexuality
Chick Lit: Contemporary Popular Fiction & Consumerism

2:15 pm **Rebecca Flint ('07)**, Women, Gender, Sexuality
The Body as a Medium: Iris Marion Young and Caroline Knap on Women's Body Experience in the United States Today

2:30 pm **Phoebe Larkin ('08)**, Women, Gender, Sexuality
Experiencing Trauma: A Personal Account and Analytical Study of How People Experience and Manage the Effects of Trauma

2:45 pm **Adriana Nordin Manan ('07)**, Women, Gender, Sexuality
Purchase and Set Her Free: Fair Trade as a Vehicle for Women's Empowerment

3:00 pm **Katherine Price ('07)**, Women, Gender, Sexuality
Why is Feminism a Bad Word?

3:15 pm **Amanda Vickerson ('07)**, Women, Gender, Sexuality
Marriage as Represented Through the Lens of Reality Television

3:45 pm **Carolyn Curtis ('08)**, Women, Gender, Sexuality
Non-Participatory Poverty

SESSION X: — *Whitney Room*
General Session — *Session Chair:*
— *Jim Terhune*

2:30-6:00 PM

2:30 pm **Adriana Nordin Manan ('07)**, Anthropology
Citizenship and Boundary Setting in Multiethnic States: The Case of Refugees in Malaysia and Ecuador

3:00 pm **Valerie Friedman ('07)**, Anthropology
Photojournalistic Manipulations of Reality: A Globalized Foucauldian Analysis

3:30 pm **Christopher Appel ('08)**, Government
ETA and Basque Nationalism: Prospects for Peace

4:00 pm **James Cryan ('07)**, Government
Sustainable Development in Practice: The Handicraft Sector of Carapegu Paraguay.

4:15 pm **Daniela Andreevska ('09)**, International Studies
The Role of Agriculture in Carapegua, Paraguay as a Factor for Achieving the Millennium Development Goals

4:30 pm **Leora Feldstein ('08)**, International Studies
The Struggle of Urban Refugees in Yaoundé

4:45 pm **Nancy McDermott ('08)**, International Studies
Theory versus Reality of Agricultural Development: A Study of GICs and Aid Organizations in Ngound r , Cameroon

5:15 pm **Adam Robbins ('07)**, Anthropology
World Bank -- CPA Conflict: The Struggle to Define Human Rights and Development in the Philippines

SESSION XI: INTERNATIONAL STUDIES
International Studies

Smith Room
Session Chair:
Paul Josephson

3:00-4:00 PM

3:00 pm **Ivica Petrikova ('07)**, International Studies
TOO MANY BAD COOKS SPOILING THE BROTH? Analysis of the Effectiveness of NGO Work in Solving the Problem of Child Labor (field research conducted in El Salvador)

3:30 pm **Katelyn Trionfetti ('07)**, International Studies
The Criminalization of Sexual Violence and Wartime Rape Under International Humanitarian Law

SESSION XII: HISTORY
History Honors I

Smith Room
Session Chair:
Raffael Scheck

4:00-6:00 PM

4:00 pm **Suzanne Swartz ('07)**
Obstacles and Stepping Stones to the Hero's Pedestal: Reunified Germany's Selective Commemoration of Resisters to National Socialism

4:30 pm **Mary Distinti ('07)**
First Response: America's Reaction to the Armenian Massacres, 1894-1896

5:00 pm **Cornelia Sage ('07)**
Museo de la Memoria: An Exploration through Memory of ESMA

5:15 pm **Samantha Lawson ('07)**
Enduring Violence:A History of Domestic Violence in New England and the Legislative Efforts that Fought Back, 1641-1992

Return to Research Symposium Home Page

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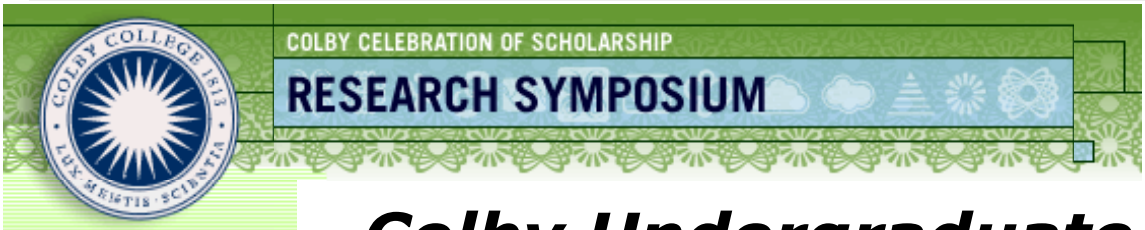

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Research Presentations

Friday, May 4

SESSION XIII: CHEMISTRY
Chemistry Senior Research

Arey 5
Session Chair:
Kevin Rice

11:00-12:30 pm

Emily McClure ('07)
Senior Research Project

Trevor Hanly ('07)
Senior Research Project

Ta-Chung Ong ('07)
Photochemical Production of Superoxide

SESSION XIV: ECONOMICS
Economics Honors

Smith Room
Session Chair:
Debra Barbezat

1:00-3:30 PM

1:00 pm **Aimee Williams ('07)**
An Analysis of the Effectiveness and Impacts of Child Cap Provisions in Welfare Reform

1:30 pm **Michael Aquino ('07)**

Can the Business Cycle Be Used to Create Predictable Mutual Fund Outperformance?

2:00 pm **Carolyn Adler ('07)**
The Determinants of Recovery Rates on Defaulted Corporate Securities: Why do Fallen Angels recover more than Original High Yield Issues?

2:30 pm **Magda Tsaneva ('07)**
Voices of the Poor: Poverty and Growth in Albania

3:00 pm **Horacio Diaz Adda ('07)**
The Divergent Effect of Social Cohesion on Economic Growth in East Asia and Latin America

SESSION XV: AFRICAN STUDIES
African Studies

Hurd Room
Session Chair: Laura Chakravarty Box

1:00-2:30 PM

1:00 pm **Ajima Olaghere ('07)**, Theater and Dance
CHANGE THROUGH TRADITION IN THE WORK OF ZULU SOFOLA

1:30 pm **Annelene Fisher ('08)**, Theater and Dance
What Colour is Coloured? Expressions of Coloured Identity and Experience in South African Theatre

2:00 pm **Roy Wilson ('07)**, Theater and Dance
Good and/or Evil: Osofisan and his Esu and the Vagabond Minstrels

SESSION XVI:
General Session

Whitney Room
Session Chair: Mark Serdjenian

1:00-5:00 PM

1:00 pm **Elani Gonzalez ('07)**, American Studies
Unlikely Romeo or a Modern Day Stepin Fetchit?: How Flavor of Love Negatively Portrays the African-American Community and Women on Television

1:30 pm **Lindsay Tolle ('08)**, American Studies
It [Doesn't] Always Got to be Blood: Alternative Kinship Systems and Agency of Naming and Self-Identity in 'Buffy the Vampire Slayer'

1:45 pm **Meghan Church ('07)**, American Studies
A Gay Gangsta: The Wire's Omar and Homosexuality on Television

2:15 pm **Avram David ('08)**, Music
A Day in the Life: Beethoven's Influence on Modern Musical Thought

2:30 pm **Ian London ('07)**, Music
African-American Influences on Barbershop Harmony

3:00 pm **Jessica Harold ('08)**, Biology
Determining the Effectiveness of Planted Corridors on the Atherton Tableland using Small Mammals as Indicators of Environmental Factors

3:15 pm **Kristen Thatcher ('07)**, Psychology
The Immunological Effects of Written Disclosure in Athletes

3:30 pm **Marissa Meyer ('07)**, Psychology
Developmental Timing of Exposure to an Enriched Environment in Rats

3:45 pm **Katherine Lillehei ('07)**, Psychology
Of Mouse and Man

4:00 pm **Adrian Gilmore ('07)**, Psychology

The Effects of Acute Testosterone Exposure on Aggression in Anolis carolinensis Lizards

4:15 pm **Kaitlin Hanley ('07)**, Psychology
Anhedonia and Depression: Anticipation, Consummatory, and Recall Deficits

4:30 pm **Sarah Faasse ('07)**, Government
Tracing the Evolution of the War Power and the Balance Among the Branches

SESSION XVII: BIOLOGY
Biology Honors Presentations

Olin 1
Session Chair:
Frank Fekete

1:00-5:00 PM

1:00 pm **Katharine Dziedzic ('07)**
D-Pax2 Regulates Crystallin in the Developing Drosophila Eye

1:15 pm **Leigh Audin ('07)**
Can the American Lobster, Homarus americanus, Detect Other Lobsters When Selecting a Shelter by Using Water Born Chemical Cues?

1:30 pm **Emily Devlin ('07)**
Geographic Distribution of Genetic Variation in Isotria medeoloides

2:00 pm **Amanda McGarry ('07)**
Mate Choice in the Zebra Finch Taeniopygia guttata

2:30 pm **Tara Bergin ('07)**
Hormonal Influence on Butterfly Territoriality and Aggressive Behavior

3:00 pm **Lee Kozakiewicz ('07)**
Confirmation of Horizontal Gene Transfer of Mercury and Antibiotic Resistance Determinants in Hatchery Lake Trout Gastrointestinal Tract Microflora

3:30 pm **Jessica Kaplan ('07)**
Circadian Patterns in the Innate Immune System of Zebrafish

4:00 pm **Anne Cuttler ('07)**
The Neuroprotective Effects of Melatonin on Neuronal Growth in Crustaceans

4:30 pm **Gregory Engel ('07)**
Characterization of Cells Cultured from Fiddler Crab X-Organs

SESSION XVIII: EDUCATION
Student Research in Education

Diamond 122
Session Chair:
Mark Tappan

2:00-3:00 PM

2:00 pm **Rebecca Anderson ('07)**, Education and Human Development
From Policy to Practice: A Look at the Implementation of the No Child Left Behind Act in Maine

2:15 pm **Anne Wachtel ('07)**, Education and Human Development
'A Little Child Shall Lead Them': Education and Cultural Identity Destruction in the Great 'Civilizing' of Indian Country

2:30 pm **Ryan Weaver ('07) and Kate Nevius ('07)**, Education and Human Development
The Hill & the 'Ville

3:00 pm **G. Albaugh ('07)**, Education and Human Development
Through the eyes of youth: A documentary

SESSION XIX: ENGLISH
Studies in English

Hurd Room
Session Chair:
Pat Onion

3:00-5:00 PM

3:30 pm **Patrick Benton ('07)**
The Agent of Change: Trickster in Ojibwa Oral Narratives and in the Works of Louise Erdrich

4:00 pm **Peter Carty ('07)**
The Apocolyptic Landscape in Cormac McCarthy's Works

4:15 pm **Matthew Crane ('07)**
Literary Ambiguity: Shakespeare and the Resonance of Language

4:30 pm **Elizabeth Finn ('07)**
The Apple and the Tree: Shakespeare's Use of Father-Child Relationships in Character Construction

SESSION XX: CHEMISTRY
Chemistry Senior Research

Keyes 105
Session Chair:
Kevin Rice

3:00-4:30 pm

Alexandra Fulreader ('07)
Determination of Hydrogen Peroxide in Natural Waters

Colby Souders ('07)
Isolation and Characterization of Frog Peptides

Eric Bergh ('07)
The Synthesis of Biomimetic Tungsten Complexes

Martin Ma ('07)
Senior Research Project

Bernadette Bibber ('07)
Senior Research Project

SESSION XXI: RUSSIAN/GERMAN
Russian Student Symposium (Talks are in Russian)

Lovejoy 215
Session Chair:
Julie de Sherbinin

3:15-5:00 PM

3:15 pm **Nicole Crocker ('09)**
The Bird and Its Flight: A Struggle for Freedom in Bulgakov's Master and Margarita

3:30 pm **Holly Duello ('07)**
The Nighttime is the Right Time: Images of Power and Influence in Bulgakov's Master and Margarita

3:45 pm **Elise Washer ('07)**
'An Upside Down World: The Opposition between Light and Dark in Bulgakov's Master and Margarita'

4:00 pm **Jessica Zia ('07)**
'Off with His Head!': Inexplicable Faith in Bulgakov's Master and Margarita

4:15 pm **Cassandra Newell ('08)**

The Corruption of Morals in Bulgakov's 'Master and Margarita'

4:30 pm **Benjamin Poulos ('08)**
'Good and Evil, The Devil and Stalin in Bulgakov's Master and Margarita'

4:45 pm **Magda Tsaneva ('07)**
The Image of the Devil in Bulgakov's 'Master and Margarita'

SESSION XXII: HISTORY
History Honors II

Smith Room
Session Chair:
Raffael Scheck

4:00-6:00 PM

4:00 pm **Alison McArdle ('07)**
Personal Politics: The Intersection of Federalism and Marriage

4:15 pm **Andrew Herrmann ('07)**
Devious Politics, Demon Rum: Neal Dow and the Battle for the First Maine Prohibition Law

4:45 pm **Christopher Hoffman ('07)**
Horace Mann and Common Schools: Moral Enlightment and Economic Opportunity

5:15 pm **Merle Eisenberg ('07)**
Demographic and Religious Changes in Sixth and Seventh Century Romano-Byzantine Edessa

Return to Research Symposium Home Page

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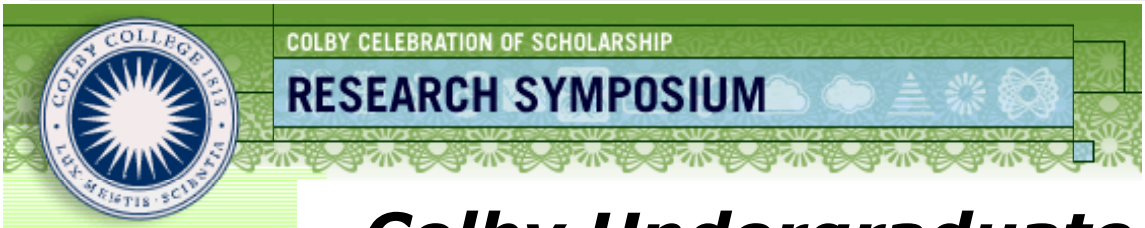

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Poster Sessions - Robins Room, Roberts

PLEASE NOTE - Posters will be set up before 12 noon on the day assigned and taken down between 5 and 6 PM on the same day. They wil l be on display for one day only. Posters will be attended by the authors from 12 noon to 2:00 p.m.

Posters #1-28 include presentations from students in Physics and Astronomy, Psychology, and Sociology and will be presented on Wednesday.
Posters #29 - 62 include presentations from students in Biology, Chemistry, Mathematics, and Economics and will be presented on Thursday.
Posters #63 - 99 include presentations from students in Environmental Studies and Geology and will be presented on Friday.

---- **Cedric Owens ('07), Chemistry**
Copper(1) Complexes with a NS2macrocyclic Ligand Bearing Various Aryl Groups

1. **Lent Johnson ('07), Physics and Astronomy**
Planetary Nebulae in M82: Kinematic and Photometric Analysis

2. **Margaret Martei ('07) and Anders Wood ('07), Physics and Astronomy**
AN INJECTION-LOCKED DIODE LASER FOR COLD RYDBERG ATOM EXPERIMENTS

3. **Arturs Vrublevskis ('07), Physics and Astronomy**
Constrained Hamiltonian Analysis of Vector Theories with Spontaneous Lorentz Violation

4. **Kathryn Bartholomew ('07), Psychology**
Decreasing Cognitive Stress through Exposure to Natural Scenery

5. **Kelly Brooks ('09) and Catherine Stieglitz ('09)**, **Psychology**
   Implicit and Explicit Attitudes toward Female Appearance Standards

6. **Lindsay Carlson ('07)**, **Psychology**
   The Neurobiology of Addiction

7. **Lana Ciociolo-Hinkell ('09), Emily Schofield ('09) and Guy Sack ('09)**, **Psychology**
   Mere Exposure & Dilution: Which has a greater influence over liking?

8. **Stacey Dubois ('08) and Adrian Gilmore ('07)**, **Psychology**
   Reducing Stereotype Threat Improves the Metamemorial Judgments of Older Adults on a DRM Task

9. **Natalie Ginsburg ('07)**, **Psychology**
   Levels of Processing of Paired Associates and Retroactive Interference

10. **Nina Gold ('09) and Carrie Potter ('09)**, **Psychology**
    Accepting Help When It Is Offered: An Investigation of Social Role Theory in College-Age Men and Women

11. **Madison Gregor ('09) and Mary Snediker ('09)**, **Psychology**
    The Conflict in Female Athletes: Does Observer Gender and/or Athletic Orientation Affect Athletic Performance?

12. **Jessie Guild ('08), Danielle Preiss ('07) and Pamela Dudley ('08)**, **Psychology**
    The Effect of Imagined Social Presence on Emotional Responding

13. **Cheryl Hahn ('08), Casey Lynch ('09) and Megan Dean ('09)**, **Psychology**
    Lasting Lover or Fleeting Fling: The Effect of Desired Relationship Length on the Extent to which Others' Opinions Matter

14. **Cheryl Hahn ('08)**, **Psychology**
    Gender Differences in the Effects of Social Context on Emotional Responding

15. **Kaitlin Hanley ('07), Alexander Shafer ('07), Ira Panova ('07) and Logan Berg ('08)**, **Psychology**
    Ego Depletion and Control Motivation in a Self-Presentational Context

16. **Margaret Hayes ('09), Ana Jijon ('09) and Carla Jacobs ('09)**, **Psychology**
    Would You Flirt to Get What You Want Out of a Man?: Women, Benevolent Sexism and Power Relations

17. **Lauren McClurg ('09), Kirstin Miller ('09) and Veronica Romero ('09)**, **Psychology**
    Power as a Threat

18. **Alexandra Morrison ('07)**, **Psychology**
    Congruence of Embedded Study Question and Test Question Type and its Impact on Anxiety Levels and Reading Comprehension Test Performance

19. **Charlotte Morse-Fortier ('08), Kristen-Marie Ortiz ('09) and Mollie Kimmel ('09)**, **Psychology**
    The Effects of Regulatory Fit On Ego Depletion

20. **Ira Panova ('07)**, **Psychology**
    Homeschooling: Is It Becoming Traditional Form of Education?

21. **Paula Pelavin ('07)**, **Psychology**
    A Meeting of East and West: Can Eastern-Influenced Therapies be Used as a Treatment for Mood Disorders?

22. **Monica Phillips ('07)**, **Psychology**
Test Anxiety and Its Correlation with Poor Examination Performance

23. **Katherine Price ('07)**, **Psychology**
The Impact of Post Event Information on Eyewitnesses

24. **Amy Reynolds ('09), Hanna Schenk ('09) and Kelsey O'Brien ('09)**, **Psychology**
The Influence of Gender and Facial Appearance on Voting Practices

25. **Alexander Shafer ('07)**, **Psychology**
Brain-Activation Comparison in Musicians vs. Non-Musicians

26. **Caroline Voyles ('08), Christina Evriviades ('08) and Megan Smith ('09)**, **Psychology**
The Influence of Social Contexts on Gender Expression

27. **Robert Zondervan ('07)**, **Psychology**
Don't Supersize Me: A Comparison of Three Anti-Obesity Drugs Efficacy in Obese Zucker Rats

28. **Jui Shrestha ('07)**, **Sociology**
Seeking Modernity: The Growth of Shopping Centers in the city center of Kathmandu, Nepal

29. **Kelly Bakulski ('07) and Zachary Zalinger ('09)**, **Biology**
Antimicrobial Properties of Two Purified Skin Peptides from the Mink Frog (Rana septentrionalis).

30. **Jacqueline Beaupre ('08) and Timothy Miller ('08)**, **Biology**
The Concentration-dependant Effects of Hydrogen Peroxide on X-organ Neuron Growth in Fiddler Crab, U. pugliator.

31. **Kathryn Bizier ('08)**, **Biology**
Exploring Optimal Foraging Strategies in Woodpeckers

32. **Aynara Chavez-Munoz ('08) and Jennifer Myers ('09)**, **Biology**
Studying the effects of chronic and acute stress on neurogenesis in cluster 10 and olfactory lobes of Fiddler crabs (Uca pugnax)

33. **Cadran Cowansage ('08)**, **Biology**
Microsatellite Screening for Estimation of Selfing Rates in Witheringia solanacea

34. **Sharon Fuller ('08) and Caitlin Rumrill ('08)**, **Biology**
Using Genetic Analysis to Track the Spread of Tick-Borne Diseases in Maine

35. **Julia Germaine ('07)**, **Biology**
Phylogeography and Demographic History of Gray Foxes, Urocyon cinereoargenteus

36. **Cheryl Hahn ('08)**, **Biology**
Social Cues and Their Effect on the Development of Learned Helplessness in Mice

37. **Katharine Harmon ('09)**, **Biology**
Transcription Targets of D-Pax2 Activity in Drosophila Sensory Systems.

38. **Kelsey Hilton ('08)**, **Biology**
Development of Microsatellite Primers in the Anemone Species Metridium Senile

39. **Kristina Langenborg ('09), Brittany Thomas ('10) and Zachary Zalinger ('09)**, **Biology**

Effects of Environmental Conditions on Class-1 Integron Mediated Horizontal Gene Transfer in Aeromonas Salmonicida

40. **Jonathan Lefcheck ('09)**, **Biology**
The Movement of the Gastropod Littorina littorea in the Intertidal Zone During the Onset of Winter

41. **Kate Ludwig ('08)**, **Biology**
Measuring Ultrasonic Communication Between Mouse Pups and Adult Mother Mice

42. **Jennifer Moody ('07), Aaron Olcerst ('07) and Leslie Wardwell ('08)**, **Biology**
Characterization of the Pervasiveness of Mercury and Antibiotic Resistance Due to Co-selection Using Population Studies of Sphagnum Core Samples Dating Back 2000 Years

43. **Katherine Renwick ('07), Alexandra Sadanowicz ('08), Claire Thompson ('08), Genevieve Dubuque ('07) and Rosalind Becker ('08)**, **Biology**
Small Mammal Assemblages under Urban Influence in Central Maine

44. **Sarah Smiley ('07)**, **Biology**
Transcriptional Regulation of D-Pax2 in Drosophila External Sensory Organs.

45. **Tenzin Tsewang ('07)**, **Biology**
Characterization of AFN1, a gene associated with cereal grain germination

46. **Kyla Wagman ('07)**, **Biology**
Size Distribution, Growth Rate, and Condition Factor of Negaprion brevirostris in Coastal Habitats of South Caicos, British West Indies

47. **Emily Wilson ('08)**, **Biology**
A Pollen Chase Experiment; Examining Varying Levels of Embryonic Inbreeding Depression

48. **Victoria Work ('08)**, **Biology**
Characterization of the Antibiotic and Mercury Resistance Capabilities of Bacterial Strains Isolated from Soils of Avery Peak, Maine

49. **JaeHee Yun ('08)**, **Biology**
Transformation of merA Genes and Antibiotic Resistance among Gram-negative Bacteria

50. **W. Crannell ('08)**, **Chemistry**
Selective Synthesis of Oxacalix[6]arenes and Mixed Oxacalix[4]arenes

51. **Marguerite Davis ('07)**, **Chemistry**
Inhibition of Human DNA Polymerase-β by Cloretazine, a Novel Anticancer Drug

52. **Erin McGowan ('08)**, **Chemistry**
Native Polyacrylamide Gel Electrophoresis Assessment of DNA Bending upon Diepoxybutane and Epihalohydrin Cross-linking

53. **Cassandra Newell ('08)**, **Chemistry**
Ion-Pairing and Molecular Recognition

54. **Adam Newman ('07)**, **Chemistry**
Quantitative PCR Suggests Preferential Nuclear DNA Alkylation by Epichlorohydrin in the Chicken Genome

55. **Ta-Chung Ong ('07)**, **Chemistry**
Photochemical production of micromolar superoxide standards in aqueous solution.

56. **Douglas Rooke ('08)**, **Chemistry**

Synthesis of Caged and Para-Linked Oxacalixarenes

57. **Michelle Starr ('07)**, **Chemistry**
Potential DNA Binding Boron Neurton Capture Therapy: Carborane-tethered Polyamines

58. **Megan Watts ('08)**, **Chemistry**
Quantitative PCR Methods for Assessing Epichlorohydrin Damage within Chicken Erythroid Cells

59. **Jennifer Murphy ('07)**, **Economics**
Interest-Free Banking, Plus Interest?: A Study of Islamic Banking in Pakistan

60. **Bridge Mellichamp ('07)**, **Mathematics**
Artificial Neural Network for Dynamical Motion

61. **Brianna Tufts ('07)**, **Mathematics**
Animation of Humans' Perception of Self Motion

62. **Arturs Vrublevskis ('07)**, **Mathematics**
Perceived Self-motion During Acceleration and Deceleration in a Centrifuge

63. **Kali Abel ('07) and Newton Krumdieck ('07)**, **Environmental Studies**
Attempts on the South Pole: A Geographic Look at the Factors Contributing to Success or Failure in Early Antarctic Exploration

64. **Kali Abel ('07)**, **Environmental Studies**
Competition in the Great Barrier Reef: A Field Study of Two Territorial Damselfish Species, Lizard Island, Australia

65. **Kali Abel ('07)**, **Environmental Studies**
Invasive Species Analysis and Public Education, Reynolds Forest, Sidney, Maine

66. **Andrew Adelfio ('07) and Dylan Harrison-Atlas ('07)**, **Environmental Studies**
Modeling Potential Ski Resort Development in Montana Using Geographic Information Systems

67. **Kelly Bakulski ('07)**, **Environmental Studies**
Environmental Health Screening Using GIS

68. **Anna Barnwell ('08) and Katherine Klepinski ('08)**, **Environmental Studies**
THE HUMAN HEALTH IMPACTS OF HOUSEHOLD CLEANERS

69. **Sarah Bartels ('08) and Timothy Brown ('07)**, **Environmental Studies**
The Human Health Effects of Pesticides on Maine Communities

70. **Elizabeth Benson ('07) and Dylan Harrison-Atlas ('07)**, **Environmental Studies**
Human Health Impacts of Contaminants Found in Local Drinking Water Supply

71. **Elizabeth Benson ('07) and Ryan Scott ('07)**, **Environmental Studies**
Analysis of Optimum Location, Viability, and Potential Effects of Wind Farm Construction in Maine

72. **Caitlin Blodget ('07) and Courtney Chilcote ('09)**, **Environmental Studies**
Personal Care Products: The Effects of Phthalates, Parabens and Fragrances on Human Health

73. **Emma Carlson ('08) and Kathryn Bartholomew ('07)**, **Environmental Studies**
Agriculture and Us: an Assessment of the Health Impacts of Organic Produce in Central Maine

74. **Caitlin Casey ('09) and Patrick Roche ('09)**, **Environmental Studies**
Lead and Human Health in Maine: Is It Still a Problem?

75. **Eva Farina-Henry ('07)**, **Environmental Studies**
Revisiting the Oregon Trail

76. **Rachel Freierman ('09)**, **Environmental Studies**
The Economic Effects of Ski Resorts on Maine Communities

77. **Eitan Green ('09)**, **Environmental Studies**
Predicting Rock and Ice Fall on the Disappointment Clever on Mount Rainier: A Model for Increasing Safety on Future Routes

78. **Julie Hike ('07) and Alisa Perry ('07)**, **Environmental Studies**
Global and Local Human Health Implications of Global Climate Change

79. **Lent Johnson ('07)**, **Environmental Studies**
Mississippi River Flood Control: A Priority Analysis using GIS

80. **Jamie Kline ('07)**, **Environmental Studies**
Homelessness in California: Using GIS to relate Density of Populations with Services and Resources Provided for the Homeless

81. **Tammy Lewin ('07)**, **Environmental Studies**
An Index for Social Welfare

82. **Emma McLeavey-Weeder ('09) and Lawson Hill ('09)**, **Environmental Studies**
Silent Killers: A Community Assessment of Outdoor Air Pollution in Maine

83. **Alexander McPherson ('07)**, **Environmental Studies**
Green Building in Maine

84. **Alexander McPherson ('07)**, **Environmental Studies**
Wetland Remediation by Aroostook County Potato Farmers: A GIS Analysis

85. **Jamie O'Connell ('08) and Cassandra Jendzejec ('08)**, **Environmental Studies**
What's in your Nalgene? Health Effects of PVC and Polycarbonate Plastics

86. **Michael Piacentini ('07) and James Cryan ('07)**, **Environmental Studies**
From Sewage to Syringes: The Health Impacts of Waste Management in Central Maine

87. **Megan Saunders ('09) and Aaron Olcerst ('07)**, **Environmental Studies**
Human Health Effects of Household Furnishings and Electronics

88. **Sarah Stevens ('09)**, **Environmental Studies**
Conceptions of Wilderness Through GIS

89. **Ryan Weaver ('07) and Casey Lyons ('07)**, **Environmental Studies**
Don't Take My Breath Away: The Human Health Impacts of Radon in Maine

90. **Kerry Whittaker ('08)**, **Environmental Studies**
Music as Place: What Happens When we Combine GIS and Music Symbology?

91. **Kali Abel ('07)**, **Geology**
Drought in Central Maine: Evidence of a Paleoclimatic Event from Tree Ring Analysis

92. **Brent Aigler ('08)**, **Geology**
A Hydrological and Sedimentological Study of the Pointe at Jamestown Detention Pond, James City County, Virginia

93. **Bradford Cantor ('08), C. Clark ('08), Elizabeth Littlefield ('07) and Newton Krumdieck ('07)**, **Geology**
Late Holocene vs. Modern Environments of Central Maine: Comparison of Pollen, Plant Macrofossils, and Coleopteran Assemblages with the Historical Record

94. **C. Clark ('08)**, **Geology**

Close-Interval Pollen Analysis as a Proxy for Determining European Impact on Hamilton Pond Bog in Kennebec County Maine.

95. **Jamie Kline ('07), Geology**
Marine Ostracodes from the Latest Pleistocene of Central Maine: Evidence for Paleosalinity and Paleobathymetry in the Waning Phases of Marine Emergence

96. **Newton Krumdieck ('07), Geology**
The Origins of the Norridgewock Sand Plain, Somerset County, Maine

97. **Elizabeth Littlefield ('07), Geology**
Foraminifera from the Presumpscot Formation: Evidence for Paleosalinity and Paleobathymetry in the Waning Phases of Marine Emergence of Central Maine

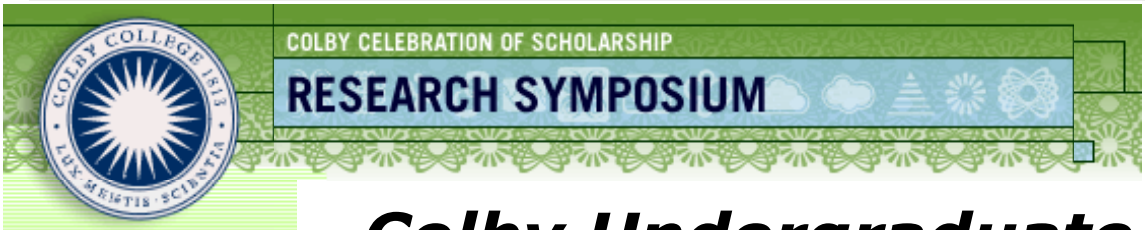
98. **Janet Weidner ('07), Geology**
Rock Detective's Introduction to Whale Ear Bone Fossils for Grades K-12

99. **Sarah Langley ('07), Physics and Astronomy**
A Quantitative Trait Analysis of the LxS RI Panel

Return to Research Symposium Home Page

Research Symposium | Celebration of Scholarship | Student Research Opportunities

Explore Colby Admissions | Directory | Search Colby



2007 Program

- Keynote Speaker
- Schedule - Wednesday
- Schedule - Thursday
- Schedule - Friday
- Poster Program
- Associated Sessions
- Abstracts
- Honors Program
- Participating Departments/ Programs

Research Symposium

Colby Undergraduate Research Symposium 2007

May 2-4, Colby College, Waterville, Maine

Keynote Address - *Dr. William Freudenburg*

May 2, 7:30 pm Olin 1

Associated Sessions

Monday, October 9

PHYSICS AND ASTRONOMY
Physics and Astronomy Seminars
3:00-4:00 pm

Keyes 105
Session Chair: Robert Bluhm

Yu-Hwei Chou ('07), Ryland Brooks ('07) and Bridge Mellichamp ('07)
Summer Internship and REU Program Reports

Thursday, November 3

SCIENCE, TECHNOLOGY AND SOCIETY
Science, Technology and Society Senior Colloquium
7:00-9:00 pm

Mudd 311
Session Chair: Piers Hale

Aaron Bradford ('07)
A Very Moral Concern: Molecular Biology and the Development of Chemotherapy

Tom Testo ('07)
Last Blast: The Politics and Sponsorship of Formula One

Tom Resnick ('07)
Morals and Milk: Neo-Luddism and Bovine Somatatropin

Brian Fulmer ('07)
Political Biology: Peter Kropotkin and the Darwinian Revolution

Monday, December 4, 2006

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Robert Bluhm***
3:00-4:00 pm

Andrew Roland ('07) and Bridge Mellichamp ('07)
Muon Lifetime and Time Dilation Experiments

Thursday, December 7, 2006

PSYCHOLOGY ***Roberts Union, Robbins Room***
Psychology Research Projects ***Session Chair: Tarja Raag***
4:00-5:00 pm

Paula Pelavin ('07), Cheryl Hahn ('08) and Monica Phillips ('07)
Context of Exercise on the DRM

Alexis Heimann ('07)
Disordered Eating in Collegiate Lean-Athletes

Stacey Dubois ('08) and Adrian Gilmore ('07)
Metamemorial Judgments in Younger and Older Adults: How Does Stereotype Threat Affect Confidence Ratings in a DRM Task?

Michael Dieffenbach ('07)
Sensory Integration Therapy

Danielle Priess ('07)
Spirituality and Social Support Through Self-help Groups for Addiction Treatment

Katie Price ('07), Rob Zondervan ('07) and Lindsay Carlson ('07)
The Verbal Overshadowing Effect

Katie Lillehei ('07) and Alex Morrison ('07)
The influence of framing on judgments of learning

Friday, December 8, 2006

GEOLOGY ***Mudd 218***
Geology Seminar Series ***Session Chair: Robert Nelson***

Brent V. Aigler ('08)
A hydrological and sedimentological study of the Pointe at Jamestown detention pond, James City County, Virginia

Betsy F. Littlefield ('07)
Foraminifera from the Presuympscot Formation: Evidence for Paleosalinity and paleobathymetry in the waning phases of marine emergence of central Maine

Kit Clark ('08), Sophie S. Newbury ('08), Meg M. Distinty ('07), Taylor M. Kilian ('08), Newt W. Krumdieck ('07), Sam B. Reid ('08), Betsy F. Littlefield ('07), Brad M. Cantor ('08) and Hannah H. Coleman ('08)
Late Holocene vs. modern environments of central Maine: comparison of pollen, plant macrofossil and coleopteran assemblages with the historical record.

Patrick H. Bagley ('09)
Latest Pleistocene marine molluscs of central Maine: evidence for paleosalinity and paleobathymetry in the waning phases of the Presumpscot Formation and subsequent marine emergence.

Jamie E. Kline ('07)
Marine ostracodes from the latest Pleistocene of central Maine: evidence of paleosalinity and paleobathymetry in the waning phases of marine emergence

Newt W. Krumdieck ('07)
The origins of the Norridgewock Sand Plain, Somerset County, Central Maine

BIOLOGY ***Olin 1***
Biology Honors Presentation ***Session Chair: Judy Stone***
1:00-2:00 pm

Malcolm Itter ('06)
Altering a Finite Markov Chain to More Accurately Model Forest Succession

Monday, March 12

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00 pm

Ta-Chung Ong ('07)
Photochemical Production of Superoxide

Roy Wilson ('07)
Temperature Control of Electron Temperature in Ultra-Cold Plasmas

Monday, March 19

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00

Sarah Langley ('07)
It All Started With Some Drunk Mice: AQTL Analysis of the LxSRI Panel

Monday, April 9

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00

Patrick Dean ('07)
Linear First Order Response for Modeling Solid Sodium

Monday, April 16

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00

Margaret Martei ('07) and Anders Wood ('07)
An Injection-Locked Diode Laser for Cold Rydberg Atom Experiments

Monday, April 23

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00

Arturs Vrublevskis ('07)
Constrained Hamiltonian Analysis of Vector Theories with Spontaneous Lorentz Symmetry Breaking

Thomas Hulse ('07)
Spontaneous Lorentz Symmetry Breaking and Modification of Physical Laws

Thursday, April 26

BIOLOGY ***Olin 234***
BI392: The Cell Cycle and Cancer Symposium on Cancer ***Session Chair: Paul Greenwood***
1:00 - 3:30 pm

Alisa Perry ('07)
Breast cancer: genetic predisposition and environmental risk factors

Kenza Sayegrih ('07)
Cancer, race and ethnicity: is there a relationship?

Jessie Kaplan ('07)
Ovarian cancer: prognosis, risk factors, and the effect of hormones

Tara Bergin ('07)
Sticker&#65533;s sarcoma: a contagious cancer

Anne Cuttler ('07)
The human papillomavirus, cervical cancer, and vaccination as a prevention method

Friday, April 27

CHEMISTRY ***Arey 5***
Chemistry Senior Research ***Session Chair: Kevin Rice***
11:00-12:30 pm

Becca Goldstein ('07)
Concomitant Conformational Polymorphs of Bis(9 anthryl)acetylene

Karen Prisby ('07)
Detection of nanomolar concentrations of Iron is seawater using a flow-injection peroxide-based luminol chemiluminescence system

Adam Newman ('07)
Quantitative PCR Suggests Preferential Nuclear DNA Alkylation by Epichlorohydrin

in the Chicken Genome

CHEMISTRY ***Keyes 105***
Chemistry Senior Research ***Session Chair: Kevin Rice***
3:00-4:30 pm

Meg Davis ('07)
Inhibition of Human DNA Polymerase-β by Cloretazine, a Novel Anticancer Drug

Kris King ('07)
Senior Research Project

Cedric Owens ('07)
Senior Research Project

Jenn Nguyen ('07)
The Photochemical Generation of Vinylidenes and the Intramolecular Study of β-acetoxyethylidene

Lauren Brown ('07)
The Role of Ligands in the Detection of Nanomolar Concentrations of Fe(III) in Seawater

Monday, April 30

PHYSICS AND ASTRONOMY ***Keyes 105***
Physics and Astronomy Seminars ***Session Chair: Murray Campbell***
3:00-4:00

Ian Cross ('07) and Yu-Hwei Chou ('07)
Far-IR Spectroscopy of NPNB and Data Analysis of Other Ni2+ Chain Compounds and Isolated Complexes

COMPUTER SCIENCE ***Mudd 405***
Computer Science Honors ***Session Chair: Dale Skrien***
4:00-5:00 pm

Thomas Cook ('07)
Evolving Art Using Genetic Algorithms

Nell O'Rourke ('07)
POV-IT: The POV-Ray Interactive Tutorial

Tuesday, May 1

BIOLOGY ***Arey 205***
BI320: Evolutionary Analysis ***Session Chair: Judy Stone***

1:00-3:00 pm

Adrienne Angel ('07)
Analysis of Molecular Variance partitions orchid genetic diversity by geographic region

Kathleen Nicholson ('08)
Asexual reproduction and self-fertilization associated with low genetic diversity in two orchid species

MaryClaire McGovern ('08)
Comparison of genetic and geographic distances among populations of Isotria medeoloides

Jamie Enos ('08)
Geographic structure of morphological traits in Maine orchid species

Kate Dziedzic ('07)
Microsatellite analysis reveals more genetic variation than do the Amplified Fragment Length Polymorphisms in a genetically depauperate orchid species

Liz Petit ('08)
Partitioning of genetic variation for the rare orchid, Isotria medeoloides

Andrew Kwak ('09)
Patterns of geographic variation reveal large effective population size in Maine orchids

ECONOMICS
EC 312 Presentations

Diamond 341
Session Chair: Tom Tietenberg

2:30-3:45

Trevor Hanly; Discussant: Prabhav Rakhra ('07)
Collusive Environmentalism: Cartel Behavior in the Maine Lobster Industry

Chris Andrews; Discussant: Alan Ozarowski ('07)
The Evolution of the "Family Purpose" Doctrine in Allocating Liability for Boat Accidents

PHILOSOPHY
Philosophy Honors Presentations

Lovejoy 215
Session Chair: Cheshire Calhoun

4:00-5:30 pm

Allyson Rudolph ('07)
Collective Responsibility

Adam Marvin ('07)
Interpretation Stops Here: Judicial Politics in a Constitutional Republic

Liz Coogan ('07)
Rawls & Health Care

Thursday, May 3

BIOLOGY
BI320: Evolutionary Analysis

Arey 205
Session Chair: Judy Stone

1:00-3:00 PM

Kristine Robin ('08)
A comparison of geographic and genetic distances among populations of the rare orchid, Isotria medeoloides

Talia Savic ('09)

Comparison of Amplified Fragment Length Polymorphism markers for two closely related orchid species

Sarah Clark ('08)
Genetic markers reveal excess homozyogosity in two closely-related orchid species

Dan Dewey-Mattia ('08)
Genetic variation in Isotria medeoloides as assessed by Simple Sequence Repeats

Heather Nickerson ('09)
Lack of genetic variation in Isotria verticillata as assessed by Amplified Fragment Length Polymorphism markers

BIOLOGY

Olin 234

BI392: The Cell Cycle and Cancer Symposium on Cancer ***Session Chair: Paul Greenwood***

1:00-3:30 pm

David Amadu ('07)
B-lymphocytes gone wild: cell biology, clinical manifestations and treatment of Hodgkin's disease

Andrew Herstein ('07)
Chronic myelogenous leukemia: a success story in targeted cancer therapies

Kate Dziedzic ('07)
Downs syndrome and leukemia

Katie Lillehei ('07)
Molecular markers in the classification of gliomas and their implications for treatment

Sarah Faasse ('07)
Pediatric soft tissue sarcomas: causes, clinical manifestations, and treatments

Beth Hirschhorn ('07)
Skin cancer

Julie Hike ('07)
The diagnosis, prognosis, treatment, and challenges of pancreatic cancer

Friday, May 4

CHEMISTRY ***Arey 5***
Chemistry Senior Research ***Session Chair: Kevin Rice***

11:00-12:30 pm

Ta-Chung Ong ('07)
Photochemical Production of Superoxide

Emily McClure ('07)
Senior Research Project

Trevor Hanly ('07)
Senior Research Project

CHEMISTRY ***Keyes 105***
Chemistry Senior Research ***Session Chair: Kevin Rice***

3:00-4:30 pm

Alexandra Fulreader ('07)
Determination of Hydrogen Peroxide in Natural Waters

Colby Souders ('07)
Isolation and Characterization of Frog Peptides

Martin Ma ('07)
Senior Research Project

Bernadette Bibber ('07)
Senior Research Project

Eric Bergh ('07)
The Synthesis of Biomimetic Tungsten Complexes

Monday, May 7

Diamond 343
ENVIRONMENTAL STUDIES ***Session Chair: Liliana***
ES 118 Research Presentations ***Andonova, David Firmage,***

and Tom Tietenberg

10:00-10:50 am

Amelia Swinton ('10), Danielle Carlson ('10), Elizabeth Kugel ('10) and Sarah Levine ('10)
Examining the Effectiveness of the Endangered Species Act: Factors of Recovery versus Degeneration

Katie Unsworth ('10), Nicole Wong ('07), Emily Boone ('10) and Sarah Sklare ('10)
Fertility Rates and Human Rights

Sam Brakeley ('10), Jennifer Brentrup ('10), James Goldring ('08) and Emma Gildesgame ('10)
Ski Areas in New England: Why Go Green?

ECONOMICS
EC 312 Presentations
Diamond 341
Session Chair: Tom Tietenberg

2:30-3:45

Stephanie Agrimanakis; Discussant: Leo Trudel ('
A Closer Look at Free Speech in the Global Context: The Truth Behind Restrictive Advertising

Amy Fredrickson; Discussant: Tutu Musumali ('07)
The Evolution of Abortion Law in the United States

PHYSICS AND ASTRONOMY
Physics and Astronomy Seminars
Keyes 105
Session Chair: Murray Campbell

3:00-4:00

Lent C. Johnson ('07)
Planetary Nebulae in M82: Photometry and Stellar Kinematics

Ryan Holben ('07)
Spectroscopy and RCAP of Rydberg Atoms

COMPUTER SCIENCE
Computer Science Honors
Mudd 405
Session Chair: Dale Skrien

4:00-5:00 pm

Tom Goth ('07)

EpiSwarm, A Swarm-based System for Investigating Genetic Epistasis

Andreea Olea ('07)
Optimizing Hardware-Software Partitioning with WalkSAT

Tuesday, May 8

BIOLOGY
BC379: Molecular Biology
Olin 213
Session Chair: Stacey Lance

1:00-3:00 pm

Brain Wadugu ('09), Sarah Clark ('08), Erin McGowan ('08) and JaeHee Yun ('08)
Examination of sequence variation and heterozygosity in the MHC II DRB1 gene in coyotes, Canis latrans.

Kelly Bakulski ('07), Sarah Faasse ('07) and Mat Wahl ('07)
Molecular analysis of bone morphogenetic protein 7 and it's potential role in the evolution of gliding morphology in flying squirrels.

BIOLOGY AND CHEMISTRY
BC368: Poster Presentations on Metabolic Disorders
Olin Arcade
Session Chair: Paul Greenwood, Julie Millard

1:00-3:00 pm

Sarah Clark ('08) and Liz Petit ('08)
Fabry's Disease
Sarah Smiley ('07) and Heather Miele ('07)
Fructose Intolerance
Elizabeth Hirschhorn ('07) and Emily Pugach ('07)
Galactosemia
Anna Czechowski ('07) and Colby Souders ('07)
Hurler's Syndrome
Jennifer Bushee ('08) and Erin McGowan ('08)
Lesch-Nyhan Syndrome
Emily McClure ('07) and Kathleen Minor ('08)
Pompe Disease
Victoria Work ('08) and Matt Stein ('08)
Primary Carnitine Deficiency
Kelly Bakulski ('07) and Meg Davis ('07)
Wilson's Disease

ECONOMICS
EC 312 Presentations
Diamond 341
Session Chair: Tom Tietenberg

2:30-3:45

Zack Schuman; Discussant: Ling Zhu ('08)
Controlling Frivolous Malpractice Suits
Clifford J. Donnelly; Discussant: Brian Lessels
The Economic Efficiency of Seat Belt Legislation and its Evolution

Wednesday, May 9

ENVIRONMENTAL STUDIES
ES 118 Research Presentations
Diamond 343
Session Chair: Liliana Andonova, David Firmage, and Tom Tietenberg

10:00-10:50 am

Michelle Presby ('09), Foua Vang ('10), Cassie Ornell ('09) and Cara Whalen ('09)
Are Small Farms more Environmentally Friendly than Large Ones?
Allison Coughlin ('09), Courtney Chilcote ('09), Michael Bienkowski ('10) and Leah Gourlie ('09)
Development and Air Quality in Asian Cities
Jackson Parker ('07), Sarah Dallas ('10), Megan Browning ('10) and Tucker Gorman ('10)
Wind Powering America: A Study of Wind Energy in Eight States

BIOLOGY
BC379: Molecular Biology
Olin 213
Session Chair: Stacey Lance

1:00-3:00 pm

Sarah Smiley ('07), Anna Czechowski ('07), Jamie Fierce ('08) and Escar Tadiwa Kusema ('08)
Exploring Bone Morphogenetic Protein 2 to Elucidate the Evolution of Morphology in Ground, Tree and Flying Squirrels.

Lee Kozakiewicz ('07), Tara Allain ('08), Tyler Schleicher ('08), Jen Moody ('07), Jacqueline Beaupre ('08), Chris Neil ('07) and Aynara Chavez-Munoz ('08)
Major histocompatibility complex variation in the gray fox (Urocyon cinereoargenteus) and related canids: a comparison of DRB1 alleles.

Victoria Work ('08), Sharon Fuller ('08) and Emily McClure ('07)
Molecular Analysis of the Effect of Variation in the Melanocortin-1 Receptor Gene on Coyote Coat Color.

Thursday, May 10

BIOLOGY
BI392: The Cell Cycle and Cancer Symposium on Cancer
Olin 234
Session Chair: Paul Greenwood

1:00-3:30 pm

K.T. Weber ('07)
A therapeutic approach to cancer: the science of oncology

Jessica Taylor ('07)
Alternative therapy: cannabinoids and cancer

Emily Devlin ('07)
Cancer gene therapy

Colby Souders ('07)
Epidermal growth factor receptor as a target of small molecule and antibody drugs

Susanne Moesta ('07)
The undesired cytotoxic effects induced by the chemotherapeutic drug 5-fluorouracil

Sarah Smiley ('07)
The use of modified adenoviruses in cancer treatment

ECONOMICS
EC 312 Presentations
Diamond 341
Session Chair: Tom Tietenberg

2:30-3:45

Kitu Seth; Discussants: Class
The Role of Corporations in Conducting Medical Practice

ART
Senior Art Exhibition
Colby College Museum of Art
Session Chair: Veronique Plesch

3-4:30 pm

ENVIRONMENTAL STUDIES
ES 118 Research Presentations
Diamond 343
Session Chair: Liliana Andonova, David Firmage, and Tom Tietenberg

7:00-7:50 pm

Stign Ortega Coppin ('08), Viviane Opitz ('10) and Samuel Morales ('09)
Democracy and Conservation in the Developing World

Kitu Seth ('09), Caroline Turnbull ('10), Margosia Jadkowski ('10) and Rocio Orantes ('07)
Determinants of Success in the Preservation of World Heritage Sites

Charlie Klassen ('10), Andrew Young ('09), Fritz Freudenberger ('09) and Taylor Tully ('10)
Does Proximity to Coal Burning Plants Increase the Mercury Levels of Aquatic Systems?

Friday, May 11

ENVIRONMENTAL STUDIES
ES 118 Research Presentations

Diamond 343
Session Chair: Liliana Andonova, David Firmage, and Tom Tietenberg

10:00-10:50 am

Anders Nordblom ('10), Dana Vancisin ('10) and Nicole Mitchell ('10)
Forest Certification and Deforestation in Latin America

Sommer Engels ('09), Samantha Buck ('09) and David Bethoney ('08)
The Causes of Biodiversity Loss in Sub-equatorial Reserve Areas

Coua Vang ('10), Hannah Couming Nemetz ('10) and Victoria Loomis ('10)
The Market Penetration of Hybrids: What Matters?

Friday, May 11

GEOLOGY
Geology Seminar Series

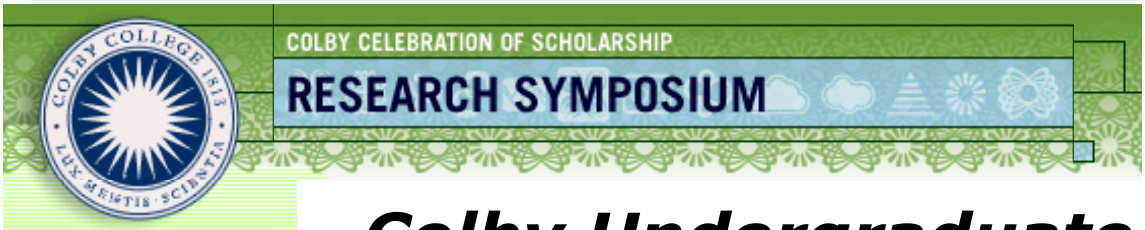
Mudd 218
Session Chair: Robert Nelson

1:00-2:30 pm

Kit Clark ('08)
Close-Interval pollen analysis of a core from Hamilton Pond Bog, as a proxy for establishing European impact on Kennebec County, Maine

Betsy Littlefield ('07)
Pollen analysis of European impact on the vegetation at Round Pond Bog, Franklin County, Maine

Kali Abel ('07)
Responses of 12 Species of Maine Trees to Variation in Annual Precipitation



2007 Program

- Keynote Speaker
- Schedule - Wednesday
- Schedule - Thursday
- Schedule - Friday
- Poster Program
- Associated Sessions
- Abstracts
- Honors Program
- Participating Departments/ Programs

Research Symposium

Colby Undergraduate Research Symposium 2007

May 2-4, Colby College, Waterville, Maine

Abstracts - Research Symposium

ATTEMPTS ON THE SOUTH POLE: A GEOGRAPHIC LOOK AT THE FACTORS CONTRIBUTING TO SUCCESS OR FAILURE IN EARLY ANTARCTIC EXPLORATION

Kali Abel ('07) and Newton Krumdieck ('07), Environmental Studies

In the early twentieth century many explorers had their sights set on Antarctica, one of the last unattained territories of exploration. It was undeniably one of the most difficult environments through which to journey, and in undertaking such a colossal challenge, early teams placed everything on the line. However, few were successful, and most faced disappointment, never reaching their goal, and often not even escaping the Antarctic alive. This project sought to look at five of the early expeditions from a geographic perspective, in order to gain a better understanding of factors contributing to success or failure for each team. The British Antarctic Expeditions of 1907 and 1910 led respectively by Ernest Shackleton and Robert Falcon Scott, the Norwegian Antarctic Expedition of 1910 led by Roald Amundsen, the Australasian Antarctic Expedition of 1911 led by Douglas Mawson, and the Imperial Transantarctic Expedition of 1914 led by Ernest Shackleton with his ship, the Endurance. Numerous factors were involved in the events of each of these expeditions. This project took into account weather, terrain, equipment and use and type of work animals. Beyond these factors, there was clearly an element of luck that led to unique events and challenges to be faced by each expedition. By taking these characteristics into account the project was able to look at what weighed most heavily in the final outcome, be it environmental and expedition elements, or simply luck.

COMPETITION IN THE GREAT BARRIER REEF: A FIELD STUDY OF TWO TERRITORIAL DAMSELFISH SPECIES, LIZARD ISLAND, AUSTRALIA

Kali Abel ('07), Environmental Studies

The community that is found in the Great Barrier Reef is perhaps the most complex in the world. Diversity is overwhelming and raises the question of how it is possible. How can so many species co-exist and not be out competed for resources and space? How can there be enough niche separation to maintain such high numbers? Niche theory says that no two species with the same niche can co-exist. One will out-compete the other into extinction. There are two prominent theories on how it is possible for so many species to co-exist on reefs. The first is that the population is kept below carrying capacity by recruitment limitation. This leads to an abundance of resources in terms of space and food so species can afford extensive niche overlap. Another theory describes an opposite idea. It states that it is the resources that are the limiting factors so species have had to develop very specific niche specialization to avoid competition. This means that there are an incredible number of niches that are very finely partitioned (Lewis 2006). Two species of fish were looked at in this study in order to explore niche separation and overlap. The species were from the Dischistodus genus and part of the Damselfish family. The study took place at Watson's

Bay on Lizard Island in the Great Barrier Reef. The bay has three signifcant zones: Coral zone, Coral Rubble zone and Rubble zone. All research was done in the water through visual belt transects of these zones and focal animal sampling. Through observation of the Dischistodus species, the study found that incredibly specific territorial differences between the fish allowed them to co-exist with remarkable overlap. Territory type and substrate were the dominant factors in allowing these two astonishingly similar species to survive in the same habitat.

DROUGHT IN CENTRAL MAINE: EVIDENCE OF A PALEOCLIMATIC EVENT FROM TREE RING ANALYSIS

Kali Abel ('07), Geology

Paleoclimatic events are recorded in numerous ways. It is possible to look back through geologic time to determine a climate vastly different than is seen today. Looking at paleoclimatic events can help deepen understanding of present environments and species. Tree ring analysis is one such tool that allows a glimpse into climatic history. The aim of this study was to understand a paleoclimatic event, in this case drought, by looking at tree rings, and attempt to understand how different species might be affected by drought. The study was conducted during the spring of 2007 and is on-going as results continue to be processed. Eleven species of tree were analyzed all from the same site in Clinton, Maine. Their orientation was marked and rings were analyzed from the southern portion of the tree towards the center in a northerly direction. Tree ring width was taken for each ring. These widths and their corresponding years were then compared to precipitation data for the years 1990-1999 during which time a drought occurred in this area of Maine. Species such as Red Maple (Acer rubrum) showed significant impact from the effects of drought, with greatly narrowed rings dating back to the early 90s, whereas the Ash (Fraxinus) specimen showed little change, perhaps indicating a greater resistance to drought conditions. Further research will help increase understanding as to which species are better off and perhaps how resistance is possible.

INVASIVE SPECIES ANALYSIS AND PUBLIC EDUCATION, REYNOLDS FOREST, SIDNEY, MAINE

Kali Abel ('07), Environmental Studies

The Reynolds Forest in Sidney, Maine is under the care of the Kennebec Land Trust based in Winthrop. The 32-acre site has been a place for studying invasive plant control methods since 2005 and has been the focus of the development of an educational program to increase awareness of invasive species and natural areas. This study was done during the summer and fall of 2006 with the aim of evaluating the invasive plant problem at the site, testing and comparing control methods for invasives, and developing a means of educating the public about the site. To accomplish these goals an inventory of forest stands and invasive species was taken. Six forest sections - River Road edge, floodplain, field edge, white pine stand, stream edge and interior forest - were identified and compared for presence of invasive plants. The road edge and field edge were most dense in invasives, and the floodplain was the most at risk given its high nutrient levels. Because of this the study suggested that future projects should focus on the floodplain as a way of protecting diversity, a key element of the USFWS grant given to the KLT. A section of the site containing Japanese knotweed, a strong invasive species, was used to compare four different methods of invasive plant control, with the aim of not only determing which methods were more effective but also as a means of demonstrating the effects of invasives in a natural area (and the extreme difficulty in removing them) in a manner accessible to the public. A pamphlet was produced to be placed at the site for the public, containing valuable information about invasives and the on-going project. Field trips continue to be lead for school groups and volunteer groups interested in the Reynolds Forest project.

MODELING POTENTIAL SKI RESORT DEVELOPMENT IN MONTANA USING GEOGRAPHIC INFORMATION SYSTEMS

Andrew Adelfio ('07) and Dylan Harrison-Atlas ('07), Environmental Studies

Development of ski resorts seems to be a thing of the past. With only a handful of resorts being developed in North America over the past few decades, one wonders about the current or future marketing potential for new ski resorts. When deciding where to develop a new resort, there are a host of factors that must be taken into account including annual snowfall, elevation, slope, and proximity to cities and transportation centers. While western states like Utah, Colorado, and California receive much of the ski industry press, other, less developed areas like Montana, seem ideal for new resort growth. Using a Geographic Information System, several characteristics of preexisting ski resorts were analyzed to determine the most important factors for defining areas suitable for development. These factors were then incorporated into a computer model to identify the areas most suitable for development within the mountains of Montana.

A HYDROLOGICAL AND SEDIMENTOLOGICAL STUDY OF THE POINTE AT JAMESTOWN DETENTION POND, JAMES CITY COUNTY, VIRGINIA

Brent Aigler ('08), Geology

Impermeable surfaces increase stormwater runoff and sediment flows to recipient water bodies. Efforts to control runoff and sediment transport include the implementation of stormwater detention ponds. To determine the effectiveness of detention ponds, we measured stormwater inflows and outflows as well as sediment concentration from a detention pond capturing water from a suburban development in James City County, Virginia, during summer, 2006. Design of this pond was based on two regulatory requirements. First, the State of Virginia has mandated that the two-year peak outflow from a development site cannot exceed its pre-development flow. Second, James City County, VA, mandated a minimum 24-hour pond detention time for runoff from the one-year, 24-hour storm. The Pointe at Jamestown detention pond collects water from a 34-acre residential housing tract which began construction in 2001. Field results demonstrate the pond's inability to reduce the two-year peak outflow to the pre-development level as specified in its engineering designs. Detention times for twelve storms measured in 2006 were less than 24 hours, although storm rainfall did not reach or surpass the one-year, 24-hour level. Entering pond design data into modeling software allowed for a quantitative comparison of a modeled detention pond to an actual pond that was built with the same specifications. Generated peak inflow, peak outflow, and detention times were significantly lower ($p \leq 0.05$) than those measured in the field. Three storms were measured during 2006 for suspended sediment input and output, and the Pointe at Jamestown detention pond captured approximately 91% of the 1849 kg of suspended sediment entering the pond through the inflow culvert.

THROUGH THE EYES OF YOUTH: A DOCUMENTARY

G. Albaugh ('07), Education and Human Development

A documentary about the life of teens living in Waterville's South End.

FROM POLICY TO PRACTICE: A LOOK AT THE IMPLEMENTATION OF THE NO CHILD LEFT BEHIND ACT IN MAINE

Rebecca Anderson ('07), Education and Human Development

The No Child Left Behind Act (NCLB) is a federal law aimed at improving the quality of schools in the US through the use of standards and accountability. For many states and schools, implementation of the law has meant changes in current educational policy. This study focuses on the state of Maine and its efforts to implement the No Child Left Behind Act, specifically through the Maine Learning Results and the Maine Educational Assessments. Additionally considered are the general responses to the act, both positive and negative, as well as thoughts its future.

THE ROLE OF AGRICULTURE IN CARAPEGUA, PARAGUAY AS A FACTOR FOR ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS

Daniela Andreevska ('09), International Studies

In April 2002, the small rural municipality of Carapegua adopted the global Millennium Development Goals on the local lever, setting up a unique example on the world scene of sustainable development. The local leaders identified 11 Selected Targets on the basis of the 8 MDG's, but improvements in agriculture, one of the two main sectors of the local economy, were not identified among the priorities of the development efforts. As a result, there have been significant improvements in health care, education, and other important aspects of life, but no improvements in the economic situation of the region. The surveys and interviews conducted in the field and the secondary research aimed at answering several questions: what is the production method in agriculture; what is the socio-economic condition of the local population; why was agriculture not identified as one of the selected targets; and what are the future implications for the development of the region? The resulting analysis answers these questions, in addition to supplying several specific recommendations about possible changes necessary to lead to improvements not only in agriculture but also in the overall economic situation in Carapegua.

ETA AND BASQUE NATIONALISM: PROSPECTS FOR PEACE

Christopher Appel ('08), Government

This presentation will analyze the prospects for peace between Spain and ETA, Western Europe's last armed, seperatist group. Given ETA's 'permanent ceasefire' in March 2006 and peace negotiations that began in the summer of 2006, significant momemtum existed for a permanent peace agreement. However, that was shattered after members of ETA bombed Madrid's Barajas Airport on December 30, 2006. The focus of the presentation will be the roots of this conflict, why peace has been so elusive, and the conflict's future peace prospects (or lack thereof).

CAN THE BUSINESS CYCLE BE USED TO CREATE PREDICTABLE MUTUAL FUND OUTPERFORMANCE?

Michael Aquino ('07), Economics

This study attempts to determine the degree to which the state of the macroeconomy can be used create a mutual fund investment strategy that consistently outperforms the S&P 500. By quantifying how systematic economic factors affect the relative performance of different fund strategies against the market, an informed investor can select the fund strategy that will outperform the S&P 500 given both the current and predicted states of the macro-economy. Linear regression models were estimated for nine different fund strategies to approximate how each macroeconomic variable affects a fund's performance against the S&P 500. Monthly returns for 1,360 mutual funds over a twenty year period were collected to conduct the analysis. A complete procedure along with two separate decision rules was subsequently created to provide an investment platform derived from the regressions results. Stage one of the procedure requires an investor to forecast the future state of the macroeconomy. It is assumed that only two types of investors exist, naïve or advanced, who employ different tools in accomplishing this task. In stage two, both investors place their forecasted values into the nine regressions to determine which fund strategy will yield the greatest level of outperformance. In stage three, the investor switches his entire position to fund that invests using that strategy. To test the performance of this procedure, the decision rules were back tested both statically and in real-time over the twenty year period. The results indicate that while the mutual fund investment strategy does not provide consistent monthly outperformance, it does yield considerable gains in the long run.

CAN THE AMERICAN LOBSTER, HOMARUS AMERICANUS, DETECT OTHER LOBSTERS WHEN SELECTING A SHELTER BY USING WATER BORN CHEMICAL CUES?

Leigh Audin ('07), Biology

The American Lobster, Homarus americanus, an aggressive and normally solitary creature, relies heavily on both shelter and chemoreception in its day to day life. Shelter not only provides protection from both conspecifics during the molting season and predators in daylight hours, but also serves as a mating location during the breeding season. Chemoreception is used in a variety of daily activities including food location, dominance reassurance, and intraspecific as well as interspecific identification. Recent studies have shown a lobsters ability to initially detect and investigate occupied shelters; however, upon arrival at the occupied shelter, the lobster was met with other visual, audial, and mechanical cues alerting it to the occupant's presence. In these studies it was found that lobsters tended to approach and attempt to enter shelters occupied by lobsters of the opposite sex. No known studies involving same sex interactions or conspecific identification via only chemical cues have been conducted with the American Lobster. Utilizing a two shelter system, in which one shelter was supplied with only chemical cues, this study aimed to show that lobsters can locate a shelter, determine that the shelter was seemingly "occupied", and make the decision on whether to enter or retreat based on the "occupants" sex. Following results of past studies and the American Lobsters aggressive and solitary nature, it was hypothesized that a lobster will seek and enter opposite sex "occupied" shelters and avoid same sex "occupied" shelters. Results split the hypothesized behaviors. Small lobsters were shown to significantly select the shelter with a large lobster of the opposite sex as an "occupant." No significant variation in shelter selection was seen with a same sex 'occupant.'

A COMPARISON OF AVIAN DIVERSITY IN PINE PLANTATIONS AND CLOUD FORESTS OF THE MAZAR RESERVE, SOUTHERN ECUADOR

Christine Avena ('08), Biology

Global climate change has become a primary concern for our generation, and many solutions have been proposed to slow the warming process. In Ecuador, thousands of acres of Mexican pines have been planted on top of the native grassland habitat by a consortium of Dutch power companies in to sequester a portion of the carbon they produce. The impact of these non-native pine forests on the diverse bird population of the Andes is largely unknown. The purpose of this observational study was to examine the species diversity of the cloud forests as compared to pine plantations in the Mazar Reserve, located in the Andes of southern Ecuador. Using mist nets and point counts to sample the bird population, a total of 209 birds representing 43 species was recorded in a period of twelve study days. The general trends in the data suggest that only a few generalist bird species are found in the pine forests, while specialists remain in the native cloud forest areas. Further research is needed to determine the resources of the pine plantation for the birds that live there, but this study emphasizes the need for present conservation efforts to preserve the remaining primary cloud forests.

ANTIMICROBIAL PROPERTIES OF TWO PURIFIED SKIN PEPTIDES FROM THE MINK FROG

(RANA SEPTENTRIONALIS).

Kelly Bakulski ('07) and Zachary Zalinger ('09), Biology

Numerous peptides exhibiting antimicrobial properties have been isolated from many species of amphibian. These peptides offer an innate chemical defense system against a broad range of microbial agents that may exist in the amphibian's environment. Amphibian skin peptides are typically tested for antimicrobial activity against microbial strains that are pathogenic to humans, but not on potential pathogenic or opportunistic bacteria that exist in the organism's habitat. Two peptides, a brevinin-2 related peptide and temporin-1SPb previously isolated from secretions of the Mink Frog, Rana septentrionalis, were tested for antimicrobial activity on environmental bacterial and fungal isolates. Microbes tested belong to the genera Aeromonas, Shewanella, Candida, and Escherichia. Additional MIC experiments have been conducted on A. hydrophila and chytrid fungus, Batrachochytrium dendrobatidis, as both are amphibian pathogens. Isolates were examined with peptides at concentrations ranging from 0.8 µM to 1000 µM to determine the minimum inhibitory concentration (MIC) to inhibit growth. Only four of the isolates were affected by temporin-1SPb at the concentrations used, but all of the isolates were inhibited by brevinin-2 related within the range of peptide concentrations used. Results demonstrate the efficacy of these peptides as a component of the frog's innate chemical defense system.

ENVIRONMENTAL HEALTH SCREENING USING GIS

Kelly Bakulski ('07), Environmental Studies

State Department of Environmental Protection agencies annually evaluate water quality. Significant concentrations of mercury or arsenic are commonly cited as the reason for the placement of a water body on the impaired list. As a part of the Toxics Release Inventory program at the Environmental Protection Agency, information is recorded on the locations of businesses emitting a given chemical either into the air, water, or soil. Using the Geographic Informational System program, the current study mapped the location of impaired waters and the sites of mercury or arsenic release. Using spatial analyst tools, points on the two data layers were correlated. Results indicate that there is no correlation between the location of an impaired river and the location of a polluter.

THE HUMAN HEALTH IMPACTS OF HOUSEHOLD CLEANERS

Anna Barnwell ('08) and Katherine Klepinski ('08), Environmental Studies

This project examines the human health impacts of household cleaners. We specifically focus on three types of chemicals commonly found in cleaners: surfactants, fragrances and Butyl cellosalve. Information on these chemicals is limited due to the lack of regulation by the household product industry and because common household cleaners contain many chemicals that are not listed on the label. Potential solutions include buying eco-friendly products and demanding safety information from the household product industry.

THE HUMAN HEALTH EFFECTS OF PESTICIDES ON MAINE COMMUNITIES

Sarah Bartels ('08) and Timothy Brown ('07), Environmental Studies

Pesticide products are part of an enormous industry in the United States and are also one of the highest human health threats in the domestic sphere. In our study of domestic pesticide exposure levels for Central Maine we determined the most commonly used pesticides for indoor use, lawn and garden care, and on produce bought from the grocery market. According to recent data, 3 billion kg of pesticides were used internationally and 500 kg of at least 600 different types of pesticides were sprayed in the US costing 0 billion. For our research, we gathered data for the most common pesticides in each of our three categories, indoor use, lawn and garden, and agriculture, and analyzed the toxicity of each product's ingredients. The majority of our information came from scholarly journal articles as well as several local and federal government sites such as the EPA and Pesticide Action Network websites. we found that the major pesticides on apples were captan and phosmet, and that the most commonly used pesticides were Roundup, Weed and Feed, TruGreen Chemlawn, Raid, and Frontline. The human health effects of these chemicals ranged from acute effects such as coughing, skin irritation, vomiting, and dizziness, to chronic effects such as tumors, endocrine disruption, organ problems or failure, and reproductive effects. alternatives to pesticides that we recommend are beneficial insects, mulching, hand weeding, using native plants that are resistant to pests, and using target traps and bait instead of sprays.

DECREASING COGNITIVE STRESS THROUGH EXPOSURE TO NATURAL SCENERY

Kathryn Bartholomew ('07), Psychology

The increasing distance between our modern lifestyle and the natural environment has created a false sense of independence from nature. This disconnect has the potential to influence individual's well-being. This study exposed participants to a stressful task while viewing a natural or an urban scene in order to discover the effects of natural scenery on individual's stress. While performing a cognitive counting task the participants were connected to physiological measurement devices that measured the levels of the physiological stress responses. It is expected that the data will show the natural condition to correspond with lower levels of stress as measured by the physiological measurement devices.

ANALYSIS OF OPTIMUM LOCATION, VIABILITY, AND POTENTIAL EFFECTS OF WIND FARM CONSTRUCTION IN MAINE

Elizabeth Benson ('07) and Ryan Scott ('07), Environmental Studies

With the increasing strain and reliance on non-renewable sources of energy coupled with rising releases of greenhouse gases, it has become necessary to explore different options in energy production that are both renewable and clean. The United States has large wind energy potential and through advances in technology it is becoming a more viable option. Maine is considered to have the highest potential for wind energy production by the Pacific Northwest Laboratory based on several factors. Through GIS and research the reality of constructing wind farms in Maine was examined as determined by average wind velocity, proximity to existing roads and power lines, land ownership and protected lands. Though wind energy exists on private and commercial levels, this study will focus primarily on large scale wind farms designed for commercial use.

HUMAN HEALTH IMPACTS OF CONTAMINANTS FOUND IN LOCAL DRINKING WATER SUPPLY

Elizabeth Benson ('07) and Dylan Harrison-Atlas ('07), Environmental Studies

One of the biggest issues concerning public health is that of drinking water quality. Exposure to contaminants contained in drinking water can result in severe health implications. A thorough analysis of over 22 million tap water quality tests performed by the Environmental Working Group found an alarming number of contaminants in public drinking water supplies. Nationwide, 260 contaminants have been detected in drinking water supplies, many in concentrations approaching or exceeding health-based limits set by the EPA. An analysis of drinking water from the Kennebec Water District Supplier detected 18 contaminants, three at levels exceeding health-based limits. These findings along with a nationwide trend of decreasing drinking water quality should warrant public concern.

THE AGENT OF CHANGE: TRICKSTER IN OJIBWA ORAL NARRATIVES AND IN THE WORKS OF LOUISE ERDRICH

Patrick Benton ('07), English

Critic John Purdy writes about the novels of Louise Erdrich that "the characters who people her pages are immensely recognizable to an audience comprised of many cultures: they exhibit all the frailties and strengths, the failures and triumphs one would expect for humans who face what we all " as individuals, as cultures, and as species " must face: change" (Purdy, 8). In fact, change is not only a theme of Erdrich's work, but the paramount theme. What is this change, though? And, who is the agent of this change? Casual readers of Louise Erdrich's works may not be aware that her characters are informed by a rich body of oral narratives concerning the Trickster: a wanderer who, motivated by food, shelter, sex, or amusement tricks animals and humans. Trickster is an important cultural hero, pan-tribally, who not only tricks, but transgresses, transforms, shape-changes, heals, and works magic. He exists liminally between the supernatural and the natural. Most importantly, he initiates change, whether seen, symbolically, through his travels and shape-changing, or, literally, through great acts of destruction motivated by self-pity, greed, or revenge. However, through destruction, Trickster also initiates creation.

HORMONAL INFLUENCE ON BUTTERFLY TERRITORIALITY AND AGGRESSIVE BEHAVIOR

Tara Bergin ('07), Biology

Competition is important in environments with limited resources, and males of many insect species are territorial and will defend resources, such as a food source or egg-laying site, against intruders, or even compete to attract a mate. In insects, evidence suggests that juvenile hormone acts as an aggression mediator, much like testosterone in other animal species. Vanessa cardui butterflies were treated prior to metamorphosis with either a high or low dose of methoprene (a juvenile hormone mimic), and male-male encounters were staged to observe any effect this had on aggression and territoriality. In each encounter a female was positioned to witness the encounter, and after a winner was determined, was released and allowed to choose a male. Males

treated with either a high or low dose of methoprene were significantly more likely to win an encounter over a control male, and males given a high dose of methoprene were more likely to win an encounter over a male given a low dose. This suggests that juvenile hormone is indeed a factor in the aggressive potential of V. cardui butterflies. Females were not interested in males of any dosage, suggesting that females of V. cardui are not choosy.

EXPLORING OPTIMAL FORAGING STRATEGIES IN WOODPECKERS

Kathryn Bizier ('08), Biology

This study was conducted in order to develop an optimal foraging model for the three species of woodpeckers that are found in central Maine: The Hairy, Downy, and Pileated woodpeckers (Picoides villosus, Picoides pubescens, and Dryocopus pileatus). Observations and measurements were conducted in the arboretum on the Colby College campus. If a woodpecker was spotted, it was followed so its behaviors could be recorded, and once it was out of sight, measurements were made on any trees it visited during its foraging activities. All data was compiled together and analyzed to see whether there were any common and/or different characteristics between the various foraging locations. Unfortunately, due to feeders being stolen and poor weather conditions, only visual sightings of Hairy and Pileated woodpeckers occurred. Both species preferred dead trees with furrowed bark, and also foraged in areas that had complete ground cover and other species of plants nearby. Pileated woodpeckers preferred trees that were surrounded by more dense vegetation, and also preferred trees that had no or very little branches, while Hairy woodpeckers preferred trees that were in more open areas and that also had some small branches. Pileated woodpeckers were found to forage on the upper half of trees, while Hairy woodpeckers foraged on the bottom half.

PERSONAL CARE PRODUCTS: THE EFFECTS OF PHTHALATES, PARABENS AND FRAGRANCES ON HUMAN HEALTH

Caitlin Blodget ('07) and Courtney Chilcote ('09), Environmental Studies

Personal care products (PCP�s) are defined as products applied to the body that are not drugs, including lotions, shampoos, perfumes, make-up, deodorant, and nail polish. The U.S Food and Drug Administration (FDA) has little control over the PCP industry, and has only evaluated the health risks of 11% of the 10,500 ingredients used in PCP�s (8). This means 99% of PCP�s contain one or more untested ingredients (3). The purpose of our research is to characterize the human health impacts of ingredients commonly found in PCP�s in the U.S. We chose to focus our research on phthalates, parabens, and synthetic fragrances, which are three of the most prevalent PCP ingredients. We collected data form the "Skin Deep" database on the presence of phthalates, parabens and synthetic fragrances in PCP�s, and researched scientific literature to determine these ingredients' human health effects. We found that phthalates, parabens, and synthetic fragrances have many adverse health effects on various human systems. Overall, the greatest human health concerns are: our body burdens of phthalates, parabens and synthetic fragrances; their presence and accumulation in our fatty tissues; phthalates' disruption of the male reproductive system as result of pre-natal exposure and their carcinogenic potential; parabens' as endocrine disruptors and their presence in breast tumor tissue; and fragrances as endocrine disruptors and carcinogens. In order to protect our health and the environment, we need to take a precautionary approach with the regulation of potentially harmful ingredients in PCP�s.

IMPLICIT AND EXPLICIT ATTITUDES TOWARD FEMALE APPEARANCE STANDARDS

Kelly Brooks ('09) and Catherine Stieglitz ('09), Psychology

This study examined implicit and explicit attitudes regarding female appearance after exposure to the ideology of personal responsibility or inclusiveness. 30 male and 30 female Colby College students, ranging in age from 18-23, were recruited for their participation. Participants were randomly assigned to the conditions of either personal responsibility or inclusiveness. Participants read false magazine articles about body weight suggesting that weight gain is your fault (personal responsibility) or that any body weight is acceptable (inclusiveness). The weight Implicit Association Test (IAT) was administered in order to score participants' attitudes based on reaction time. Following the IAT, participants answered nine questions to evaluate their explicit attitudes. Researchers found no significant effect of ideology or gender of participant on implicit or explicit attitudes toward female appearance standards. These findings suggest that attitudes about female appearance standards may not be manipulated by ideological priming or differ for males and females.

LATE HOLOCENE VS. MODERN ENVIRONMENTS OF CENTRAL MAINE: COMPARISON OF POLLEN, PLANT MACROFOSSILS, AND COLEOPTERAN ASSEMBLAGES WITH THE

HISTORICAL RECORD

Bradford Cantor ('08), C. Clark ('08), Newton Krumdieck ('07) and Elizabeth Littlefield ('07), Geology

This reports results of a study of a pre-Colonial habitat in central Maine. The Sandy River cutbank study site in Starks, ME was sampled for pollen, plant macrofossils, and coleopteran remains. Modern river sediment samples were taken for comparable organic remains. Historical records yielded data for this area from the mid-18th century, predating significant European impacts. Pollen from the sediments is dominated by Tsuga and Betula, with minor Abies and Pinus. Modern river sediment samples show a shift to Betula dominance with decreased Tsuga, Abies and Pinus. The plant macrofossil record was dominated by graminoids, suggesting the depositional site was an herbaceous marshland devoid of regular flooding. Plant macrofossils from this section add Panicum latifolium, Carex, Scirpus, Najas flexilis, Potamogeton, Rubus, and Sambucus canadensis to the late Holocene flora. The modern river detritus sample, however, was dominated by woody debris, including leaves and seeds of the introduced Acer saccharinum, needles of Abies balsamea, Pinus strobus, Thuja occidentalis & Tsuga canadensis, and macrofossils of Betula populifolia, Quercus rubra, Carex, Scirpus, Najas flexilis and Poaceae. Elmidae, Staphylinidae and Carabidae dominated the coleopteran remains. The Holocene fauna was typified by a greater diversity in Elmids; Carabidae include Bembidion frontale, a species of wet organic substrates, and Agonum extensicolle, of more open sand or gravel; Sphaeroderus lecontei is a forest species. Bembidion castor and Schizogenius sulcifrons in modern detritus are characteristic of open sand and gravel substrates. Historical records suggest pre-European uplands were pine-dominated, but lowlands by hemlock and cedar, consistent with this study. A shift towards more hardwoods is seen in the fossil record.

AGRICULTURE AND US: AN ASSESSMENT OF THE HEALTH IMPACTS OF ORGANIC PRODUCE IN CENTRAL MAINE

Emma Carlson ('08) and Kathryn Bartholomew ('07), Environmental Studies

In the 1990s the United States Department of Agriculture (USDA) established a standardized label for organic products. This label was in response to a demand for more information about produce, including how the product was farmed. While the federal organic label offered a solid starting point, it did not address some of the main issues surrounding food. As food is essential to life, it is important to acknowledge the human health impacts of the production, distribution, and consumption of organic produce. In this study we examined the organic produce available at four grocery stores in Waterville in order to promote more knowledgeable and conscientious consumerism in the area.

THE NEUROBIOLOGY OF ADDICTION

Lindsay Carlson ('07), Psychology

Addiction is a disease that an estimated 23 million Americans suffer from, yet only 10% of addicts seek treatment for it. Even though addiction was defined as a disease by the American Medical Association in 1956, the public still views addiction as a social problem, or a character flaw. Addiction research has been hindered because of this negative view, however, many neurobiological mechanisms have since been discovered. After drug administration, the mesolimbic pathway, or reward pathway, is activated and the drug is positively reinforced. Chronic use causes neuroadaptations, such as neurotransmitter imbalances, which will make one experience withdrawal symptoms, when one tries to stop use. One will crave the drug in order to compensate for these imbalances. This drug craving may cause the addict to relapse and the cycle of addiction will continue. The Diagnostic and Statistical Manual of Mental Disorders (DSM IV-TR) diagnoses substance dependence, or addiction, as a disorder when one meets a specific criteria. The neurobiological mechanisms underlying addictions to alcohol, nicotine, and marijuana were investigated.

LEAD AND HUMAN HEALTH IN MAINE: IS IT STILL A PROBLEM?

Caitlin Casey ('09) and Patrick Roche ('09), Environmental Studies

The phase-out of leaded gasoline and the reduction of lead based household paints is often touted as one of the great success stories of pollution regulation in the United States. Yet, we are not completely free from the hazards of lead in the environment. As a persistent chemical, emissions and spills that occurred in the past can still infiltrate and contaminate water and air. Lead based paint still exists in many households built before knowledge of lead's detrimental cognitive effects were discovered and publicized. Additionally, lead is currently used to produce some pigments, batteries, radiation shields and solder. This study examines the exposure and body burdens of lead in Kennebec County and uses that information to characterize the residents' health risk from lead. The study will conclude that only a few sources of lead hazards exist but that these few sources

pose a greater risk to certain demographic groups.

HIGH MAGNETIC FIELD SPECTROSCOPY OF VIBRATIONAL AND ELECTRONIC TRANSITIONS IN NTNB AND OTHER INTEGER SPIN COMPOUNDS.

Yu-Hwei Chou ('07) and Ian Cross ('07), Physics and Astronomy

Research has shown that many Haldane compounds (compounds with integer spin) have magnetic field dependent electronic transitions. We were recently able to obtain a new non-Haldane compound, NTNB (Ni(tn)2(NO2)BF4). NTNB is molecularly similar to a typical Haldane compound in that it is composed or a chain of repeating units of nitrogen rings around a Nickel atom and large organic counter ions. However, NTNB is less disordered in structure than typical Haldanes, and we have found that its spectroscopic features differ markedly from Haldanes both in zero field and under high magnetic fields. We compared NTNB to Haldanes such as NENB and to a paramagnetic compound, Tris. We also did zero field measuremnts on vibrational transitions on the Haldane NTDN.

A GAY GANGSTA: THE WIRE'S OMAR AND HOMOSEXUALITY ON TELEVISION

Meghan Church ('07), American Studies

"A Gay Gangsta" explores how Omar, a gay character on the HBO show, The Wire, has become a favorite among a historically homophobic audience, athletes. My research shows that while homosexual characters have been on television shows since the late 1960s, most of these characters have served only in the capacity to bring homosexuality to the show"s discourse. These characters" sexuality inhibits their ability to be seen as anything else; essentially, their sexuality defines them. The Wire, has successfully broken the "gay character" mold to create a multi-faceted gay character in Omar. I analyze how The Wire has been able to create this character and what this should mean for the future of homosexual characters on television.

MERE EXPOSURE & DILUTION: WHICH HAS A GREATER INFLUENCE OVER LIKING?

Lana Ciociolo-Hinkell ('09), Guy Sack ('09) and Emily Schofield ('09), Psychology

In accordance with the mere exposure effect (Hansen & Bartsch, 2001), the more someone is exposed to another person, names, or random words, the more they will like them. In accordance with the dilution effect (Nisbett, Zukier, & Lemley, 1981), nondiagnostic information, when mixed with diagnostic information, creates a more moderate impression. We define diagnostic information as information that could be used to build a distinctly positive or negative impression of another. In our research, participants are exposed to positive diagnostic and nondiagnostic information as well as combinations of the two. Positive diagnostic information is defined as information that would not necessarily lead to any sort of impression--positive or negative. The purpose of this study is to observe how these two effects interact with one another. It appears that no one has combined these two areas of research and it is possible that, when participants are faced with multiple exposures to diluted information about another, interesting effects may be observed.

CLOSE-INTERVAL POLLEN ANALYSIS AS A PROXY FOR DETERMINING EUROPEAN IMPACT ON HAMILTON POND BOG IN KENNEBEC COUNTY MAINE.

C. Clark ('08), Geology

The study of the pre-colonial forest becomes ever more relevant with a move towards restoring Maine"s forests to their natural state. This study seeks to help answer this question. A one-meter core was removed from Hamilton Pond Bog in Kennebec County, Maine and sampled at 5-cm intervals for pollen data. Samples were submitted for AMS dating from 90 and 50 cm depths and found to be 1820 "40 and 1140 "40 BP radiocarbon years old, respectively. Hamilton Pond Bog"s accumulation rate was approximately 0.5 mm per year for the entire span of the section. Pollen from the sediment is dominated by Pinus (Pine), Tsuga (hemlock), Betula (birch), and Acer (maple), the upper end of the section shows a reduction in Tsuga, Betula, Abies (fir) and Acer with a sizeable increase in Ambrosia (ragweed), Pinus, and Ericales (heaths). Clear cutting selectively removed Tsuga, Abies, Betula, and Acer from the local forest. Loss of groundcover allowed for increased nutrient flow into the bog, inducing the Ericales spike. In conjunction with AMS dates the recent changes in forest composition can be attributed to anthropogenic sources. Increase in Pinus and Ambrosia indicates increased cultivation and subsequent abandonment of fields in the last fifty years.

CHICK LIT: CONTEMPORARY POPULAR FICTION & CONSUMERISM

Allison Cole ('07), Women, Gender, Sexuality

Literature targeted at women has long been a subject of close scrutiny, with much attention paid by feminist scholars to the rise in popularity of Harlequin and romance novels in the 1970s and 1980s. Several different assertions have been made as to what purpose they serve for their female readers, and there is no consensus over whether they are viewed as merely "good" or "bad." Instead, it is a far more complex issue than that: Is it a form of escapism? Does it reinstate traditional values of patriarchal love and/or domination without any other redeeming values? Does it provide a sense of empowerment in some fashion? As Char Toews points out in her article, "Pop Culture Revisited," if one takes these novels out of the category of pulp fiction or simply trashy reading, it is then that one can begin to analyze the way in which women interact with them "not as passive consumers but as active agents." The next step, then, is to apply this critical lens to the newer genre that has come to be known as chick lit. Consumerism and the seeming desire of women readers to live vicariously through the purchasing power of the protagonists of these novels gets at the major question of chick lit: Why now have these books become so incredibly popular?

MICROSATELLITE SCREENING FOR ESTIMATION OF SELFING RATES IN WITHERINGIA SOLANACEA

Cadran Cowansage ('08), Biology

The evolutionary transition from outcrossing to self-fertilization in flowering plants is important, yet incompletely understood. The Costa Rican shrub Witheringia solanacea provides a valuable opportunity to study this transition because it possesses both self-incompatible (SI) and self-compatible individuals (SC), and thus is in the midst of such a transition. The rate at which SC individuals actually self-fertilize is an important parameter in models predicting the evolution of SC. The assembly of a microsatellite library allowed for primers to be designed and used as a tool to compare the varying number of repeats in parent and progeny plants at specific loci. By collecting data on the genetic differences between offspring and parent plants we hope to estimate the selfing rate of SC individuals and understand the genetic and ecological factors that contribute to self-fertilization.

LITERARY AMBIGUITY: SHAKESPEARE AND THE RESONANCE OF LANGUAGE

Matthew Crane ('07), English

'NOTHING THAT IS SO, IS SO': INDETERMINATE LANGUAGE IN SHAKESPEARE The Shakespearean canon is characterized by indeterminacy. His world is one where nothing is as it seems; men pose as women, nobles as commoners, and sisters as brothers. The resulting confusion challenges conventional norms, questioning gender, cultural, and other social boundaries. The surface uncertainty extends beneath the costumes and performers to the very foundation of theatre"language"as spaces emerge between words and meaning, and what is said and what is meant. Shakespeare"s use of ambiguous language opens his plays to multiple interpretations, creating a constant, but fluctuating, separation between the reader and text, the literal and figurative, and the expressed and implied. From gaps in the language itself to indeterminate spaces within gender and sexuality, Shakespearean theatre"s porous quality enables each play to constantly assume new and different meanings and a timeless quality.

SELECTIVE SYNTHESIS OF OXACALIX[6]ARENES AND MIXED OXACALIX[4]ARENES

W. Crannell ('08), Chemistry

Oxacalix[n]arenes are macrocycles composed of aromatic rings meta-linked by an oxygen atom. Oxacalix[6]arenes (a macrocycle composed of six aromatics) can now be selectively synthesized in high yield by the reaction of two "trimer" precursors, proceeding by a nucleophilic aromatic substitution mechanism. Using different trimers and nucleophiles/electrophiles, 'mixed' oxacalix[4]arenes can also be selectively synthesized by a [3+1] addition.

THE BIRD AND ITS FLIGHT: A STRUGGLE FOR FREEDOM IN BULGAKOV'S MASTER AND MARGARITA

Nicole Crocker ('09), German/Russian

The Russian senior seminar this semester focused on the Bulgakov"s famous novel, Master and Margarita. This presentation focuses on one of the themes of the novel, specifically Bulgakov"s use of birds in his work. Birds appear numerous times in Master and Margarita, and it always has a connotation of either a lack of freedom or a recent achievement of this goal. There are even instances in which characters themselves, as they seek freedom from their former oppressive lives, become the "birds" in the novel. This paper is an exploration of bird imagery in the novel.

NON-PARTICIPATORY POVERTY

Carolyn Curtis ('08), Women, Gender, Sexuality

In a capitalistic market society, all individuals should have an equal opportunity to participate, with varying extents, in consumerism. Yet that does not happen in reality, and the number of children living in poverty is increasing. These children internalize the message that since they cannot participate in a society based on consumerism, they cannot belong. Poverty not only causes individuals to experience their lives differently, but also affects the development of one's physical, cognitive, social, and emotional identity. Most of the consequences of poverty have been scrutinized and studied to try to explain the experiences of such children. What has not been as closely examined however is the relationship between the inability to participate in a consumer society and the bodily being, thoughts, actions, and feelings of impoverished children. I will discuss how these effects of poverty result from the inability of children to participate in society. The physical consequences of poverty pertain to the lack of health care, and the absence of proper food and nutrients. The cognitive development of impoverished children sets them further behind academically. Economically disadvantaged children tend to be more likely to participate in high-risk behaviors and have higher rates of depression or feelings of hopelessness. All of these consequences of poverty are linked to children's social exclusion. A lack of money mediates the socialization of children, and when they cannot be a fully consuming member of society, they suffer in regards to their physical, mental, behavioral, and emotional developments.

THE NEUROPROTECTIVE EFFECTS OF MELATONIN ON NEURONAL GROWTH IN CRUSTACEANS

Anne Cuttler ('07), Biology

Melatonin is a lipophilic neurohormone found endogenously in a variety of species. Unlike in vertebrates, melatonin is the neurochemical signal of light in crustaceans, with production increasing during the day. In fiddler crabs (Uca pugilator), melatonin is most likely produced in the retina, located in the eyestalk nearby the sinus gland/X-organ. This structure is composed of approximately 200 iridescent-white neuronal somata which synapse in the sinus gland and release growth, reproductive, metabolic, osmotic and homeostatic regulatory hormones. The sinus gland/X-organ is an ideal subjust for isolating neurons in culture for experimental manipulation in vitro because crustacean neuroendocrine cells show immediate neurite outgrowth, the neurons are relatively large and because they survive in a simple growth medium for several days. The neuronal cytoskeleton is composed of a complex network of microtubules, microfilaments, intermediate filaments and associated proteins. Microtubule, microfilament and intermediate filament rearrangements occur during neurite formation and axogenesis, with the eventual formation of synaptic connections. Cytoskeletal abnormalities lead to irreversible neuronal dysfunction and cell death associated with Alzheimer's disease, dementia, and other neurodegenerative diseases. Melatonin plays a neuroprotective role by acting as a free radical scavenger, neutralizing excessive free radicals produced by toxic compounds and preventing lipid membrane peroxidation and apoptosis. This study focuses on melatonin's ability to block the negative effects of oxidative stress caused by hydrogen peroxide in X-organ neurons by measuring the area of neurite outgrowth and comparing actin and tubulin arrangement in treated and control crustacean neuroendocrine cells.

INHIBITION OF HUMAN DNA POLYMERASE-&BETA; BY CLORETAZINE, A NOVEL ANTICANCER DRUG

Marguerite Davis ('07), Chemistry

The carbamoylating activity of Cloretazine, an anticancer sulfonylhydrazine prodrug, can modify cellular proteins and affect their function, synergizing with Cloretazine's primary cytotoxic lesion, DNA alkylation. We show here that DNA polymerase beta (Pol β), specific to DNA excision repair processes, is inhibited by Cloretazine in vitro with an IC-50 of 74 mM. Furthermore, using analogs of Cloretazine that lack either the DNA alkylating or carbamoylating activities, we demonstrate that the carbamoylating activity is specifically responsible for this inhibition. BCNU, a clinically useful anticancer agent with DNA alkylating and carbamoylating activities also inhibited Pol β albeit with a more modest IC-50 of 271 mM. A similar pattern of inhibition was observed with the E. coli polymerase Klenow Fragment. Inhibition of general DNA synthesis in cultured cells has already been reported at similar concentrations. Pol β is likely involved in repair of Cloretazine-induced DNA monoadducts in the absence of functioning direct repair processes. We are also investigating the lyase activity of Pol β which is also involved in base excision repair.

GEOGRAPHIC DISTRIBUTION OF GENETIC VARIATION IN ISOTRIA MEDEOLOIDES

Emily Devlin ('07), Biology

The rare orchid, Isotria medeoloides, is a threatened species native to the eastern United States. The species' range extends from Maine to Georgia, with many populations including fewer than 25 individuals. The degree of genetic variation among populations could have important

implications for conservation strategies. If little genetic variation exists among populations, transplantation of individuals from larger to smaller populations may help revive dwindling populations; however, if there is significant variation, introduction of individuals to small populations risking extinction may be detrimental. This study evaluated the level of genetic variation within and among I. medeoloides populations through analysis of microsatellite regions, which contain dinucleotide repeats. The lengths of these regions are highly variable and have high mutation rates, making microsatellites a powerful genetic marker. Genetic variation was assessed at two microsatellite regions among 15 populations and three regions (New England, Virginia and Georgia). In this largely self-pollinating species, the inbreeding coefficient was high (Fis = 0.964) indicating a high rate of self-fertilization. Populations in New England harbor the most genetic diversity. Southern populations are monomorphic or nearly so, but distinct from each other, suggesting that they have each independently arisen by long-distance colonization from northern populations.

THE DIVERGENT EFFECT OF SOCIAL COHESION ON ECONOMIC GROWTH IN EAST ASIA AND LATIN AMERICA

Horacio Diaz Adda ('07), Economics

In this paper I explore the link between social cohesion and economic growth in Latin America and East Asia. Unlike previous studies, I allow for different slope parameters for the different regions. Using ethno-linguistic fractionalization as a proxy, I find evidence to suggest that social cohesion has affected growth differently in Asian and Latin American countries. Social cohesion has not played an important role in determining growth outcomes in Latin America. On the other hand, social cohesion helps explain a large degree of the growth differentials among Asian countries. Once institutional quality is included as a control variable, the evidence is ambiguous on whether social cohesion has played a significant direct effect on economic growth in Asia. However, these results are contingent on the proxy used for social cohesion. Since there is no theoretical way of distinguishing the best proxy for social cohesion, I estimate social cohesion in a set of structural equations as an unobserved variable with observable causes and indicators. Using the estimated values of social cohesion in the growth regressions does not affect the previous results obtained using ethno-linguistic fractionalization as a proxy.

FIRST RESPONSE: AMERICA'S REACTION TO THE ARMENIAN MASSACRES, 1894-1896

Mary Distinti ('07), History

A series of anti-Armenian massacres took place in the Ottoman Empire from 1894 to 1896. Generally considered to be the prelude to the later Armenian Genocide, these massacres spurred widespread outrage in both Western Europe and the United States. In America, active relief efforts went hand in hand with and political legislation that eventually condemned the actions of the Ottoman Government. The Armenian massacres came at a time when social responsibility and foreign policy were two if the major topics in American public debate. By looking at newspapers, memoirs and diplomatic correspondences, this study explores exactly how Americans responded philanthropically to the massacres, and the extent to which the international incident provided a medium for reshaping America's role on the international stage.

INTERLOCKING OPPRESSIONS OF SISTERHOOD: (RE) PRESENTING THE BLACK WOMAN IN NINETEENTH CENTURY BLACKFACE MINSTRELSY

Catherine Downing ('07), English

Blackface minstrelsy began as a racially derisive form of early nineteenth century white working class stage entertainment that essentialized blackness into an object of social ridicule. Racial burlesque coupled with gender performance stigmatized popular representations of black womanhood. Repetition of blackface minstrelsy's negative images solidified the black woman's stereotyped mainstream identity as a subordinate group with equally overlapping social forms of oppression. Within the first fifty years of repetitious blackface performance, the objectifying images of black female inferiority constructed a dominant American racist and sexist ideology. The black woman was either the Mammy or the Jezebel. For blacks, the only way to change the mainstream image was to join the ranks of the signifiers. Adopting Marxist theory of historical progression and adapting an evolutionary process of racial, cultural, and social ideological building on the minstrel stage, African Americans (re) produced images of blackness with powerful yet subtle subversions, saving the mainstream black feminine representations from universal ridicule.

REDUCING STEREOTYPE THREAT IMPROVES THE METAMEMORIAL JUDGMENTS OF OLDER ADULTS ON A DRM TASK

Stacey Dubois ('08) and Adrian Gilmore ('07), Psychology

The present study examined the effects of stereotype threat on the association between confidence ratings and objective performance on a DRM false memory task in both older and younger adults. To determine whether older adults' false memory susceptibility is mediated by the effects of stereotype threat, older and younger adults were given DRM lists in either a high threat or low threat condition. Results demonstrated that older adults recognized significantly higher proportions of critical lures than younger adults and also assigned significantly higher confidence ratings to their false memories overall. However, older adult participants' objective performance improved when stereotype threat was reduced, and they assigned more accurate confidence ratings to their recognition responses in the low threat condition than in the high threat condition. Thus, stereotype threat may result in an exaggeration of the differences between younger and older adults' performances on a memory task, and reducing that threat may provide a more accurate picture of memory deficits associated with aging.

D-PAX2 REGULATES CRYSTALLIN IN THE DEVELOPING DROSOPHILA EYE

Katharine Dziedzic ('07), Biology

D-Pax2 is a differentiation factor that specifies cell types in a variety of sensory systems. It acts as a transcriptional activator in the cone and primary pigment cells of the eye and in the support cells of the external and chordotonal sensory organs. The gene targets that D-Pax2 regulates, however, remain unknown. Crystallin (Cry), the major protein component of the Drosophila lens, is expressed in the cone and primary pigment cells and may be directly regulated by D-Pax2. Immunohistochemical analysis of Cry protein in the developing eye shows that Cry protein is greatly reduced in eyes from D-Pax2 mutant flies. Ectopic expression of D-Pax2 using the GAL4-UAS system leads to coincident ectopic expression of Cry. A potential D-Pax2 binding site is located approximately 1.3 KB upstream of the Cry transcriptional start site. Electrophoretic mobility shift assays demonstrate sequence-specific binding of a D-Pax2-MBP fusion protein to this site. To examine the D-Pax2/Cry promoter interaction in vivo, we have cloned the Cry promoter into pH-Stinger, a P-element plasmid containing a nuclear eGFP reporter gene. We are currently generating transgenic flies and plan to assess the expression of eGFP from this construct in wild-type and D-Pax2 mutant backgrounds.

DEMOGRAPHIC AND RELIGIOUS CHANGES IN SIXTH AND SEVENTH CENTURY ROMANO-BYZANTINE EDESSA

Merle Eisenberg ('07), History

During the 6th and early 7th centuries significant demographic and religious changes occurred in Edessa. The Edessene Christians debated Christ's nature, with the majority of Edessenes believing he had a single nature, the Monophysite creed, which differed from the imperial supported Chalcedonian creed, which espoused Christ's dual nature. Throughout the 6th century, the Edessene Monophysites gradually separated their ecclesiastical hierarchy from imperial control and, by the beginning of the 7th century, had little religious allegiance to the imperial religious hierarchy. Thus, the Edessene Monophysites had a rationale not to support the Romano-Byzantine state. The Edessene Jews became similarly dissatisfied, since during the 6th century the state began to limit their rights making them a subservient religion politically in addition to their already reduced religious status. Into this problematic situation, the Sasanid Persians captured Edessa in 609 and, after a brief return of Romano-Byzantine rule, the Arab Muslims captured the city in 639. With one exception, however, the Edessene Monophysites and Jews did not undermine Romano-Byzantine rule during this period. This paper explores why these denigrated or persecuted minority groups did not undermine or revolt against the state.

CHARACTERIZATION OF CELLS CULTURED FROM FIDDLER CRAB X-ORGANS

Gregory Engel ('07), Biology

The fiddler crab, Uca pugillator, is a useful model for studies of the nervous system. It is plentiful, easy to use, and shows similarity to mammalian models. The nervous system of this animal has not been thoroughly characterized, however. This study attempts to characterize hormonal secretions of subsets of cells cultured from Uca pugillator x-organs. X-organs were harvested from crabs and dissociated in culture dishes. Cells present in each dish were observed and sorted into two categories: large (>=50µm), and small (<50 µm). Cells were then depolarized with KCl and secretions injected into live, eyeless crabs. Controls were injected with homogenate of eye stalk. Glucose levels were then measured and compared. Data is pending.

TRACING THE EVOLUTION OF THE WAR POWER AND THE BALANCE AMONG THE BRANCHES

Sarah Faasse ('07), Government

Throughout American history, the balance of the war power enumerated in Article I, Section 8 of the US Constitution has been in constant flux. Historical precedent set by activist presidents and ambivalent Congresses has substantially expanded the executive war power, which now seems to be in direct contradiction to the text of the Constitution. Most recently, the Bush administration has come under fire for executive action in the Iraq war -- but is the administration really out of line, according to the Constitution and historical and judicial precedent? Where should the proper legal balance lie between precedent and text? What does the text enumerate, and how should it be interpreted? The judiciary has played a key role in the establishment of precedent and has the final word in the interpretation of the Constitution; but its activity, too, has evolved since the ratification of the Constitution. In order to determine the proper distribution of enumerated war powers, this paper looks at the treaty power, military tribunals and executive detention, and the war power itself separately, particularly in the context of the war being fought today. Finally, it must be considered whether or not Congress, which has unarguably been stripped of at least some of its authority in war by the executive, truly desires a greater role in the war power. While the working balance of war power may be practical, is it legal, or has the current administration interpreted executive war power too broadly?

REVISITING THE OREGON TRAIL

Eva Farina-Henry ('07), Environmental Studies

Expansion of the United States was facilitated by the creation and use of the Oregon Trail from the 1840's through the 1860's. This project will try to determine what the most perilous locations along the Oregon Trail were based on natural factors such as elevation, temperature, precipitation and flood plains. Locations will be decided upon by comparing the variables to each other in a manner that takes into consideration the timing of a typical journey along the Trail.

THE APPLE AND THE TREE: SHAKESPEARE'S USE OF FATHER-CHILD RELATIONSHIPS IN CHARACTER CONSTRUCTION

Elizabeth Finn ('07), English

In order to be a box office success, Shakespeare had to be both aware of, and a masterful manipulator of, the social codes of his time and the assumptions his audience brought to the theater. One aspect he used again and again were the dynamics of father-child relationships, relationships highly bound up in the gender politics of early modern England. These relationships were an especially useful tool in constructing and metamorphisizing the child character. My readings of Shakespeare's early histories, comedies, and tragedies up to and through the midpoint of his career, Hamlet, suggest Shakespeare was particularly attuned to his society's assumptions about, and tensions surrounding, father-daughter and father-son relationships and was profoundly skillful in representing these. With increasing daring and subtley, he traces a fine, wavering line between conventional, reassuring representations of gender and familial relations of the time and provocative, unconventional ones.

WHAT COLOUR IS COLOURED? EXPRESSIONS OF COLOURED IDENTITY AND EXPERIENCE IN SOUTH AFRICAN THEATRE

Annelene Fisher ('08), Theater and Dance

This project is concerned with the exploration of representations of Coloured identity and experience in South African theatre by Coloured playwrights and/or works having as their target audience South Africa's minority Coloured population. The paper provides a contextual historical and cultural framework, with a special emphasis on Cape Flats theatre. It considers earlier, as well as contemporary, works/productions that celebrate local stories, expose complex domestic experiences and provide challenging social commentary. Among the works examined are those of [cap?]Coloured theatre icon Taliep Petersen and those in the emerging race-based humour scene such as Marc Lottering, Oscar Petersen, David Isaacs and Heinrich Reisenhofer, creators of the Joe Barber play/production series.

THE BODY AS A MEDIUM: IRIS MARION YOUNG AND CAROLINE KNAP ON WOMEN'S BODY EXPERIENCE IN THE UNITED STATES TODAY

Rebecca Flint ('07), Women, Gender, Sexuality

On a daily basis, humans feel hundreds of different sensations through the physical medium that we call our body. These sensations are the complex result of the physical environment surrounding us, our placement in the societal timeline, the people and objects that surround us, and how our bodies combine and interpret all of these factors. Our brains in turn process these sensations and we form a story around the sensations in an attempt to explain what we are feeling. One of the most influential factors in the determination of how we interpret our bodily sensations is whether our body is gendered female or male. The female body experiences the world in a wholly different

manner than the male body. Two women who have spent a great deal of time closely examining the ways in which women experience their bodies and their bodily sensations are Iris Marion Young and Caroline Knapp. Both of these women explore female experiences of and related to the physical body, but in two very different contexts. In Knapp's memoir, Appetites, she explores the intersections of the hungers the female body experiences in our society today through an explanation of her experience with anorexia. In a compilation of feminist philosophical essays, On Female Body Experience, Young presents ways in which we can use the body experience to understand women's life experiences. Through a close reading of both Young and Knapp's works, I provide an in-depth analysis of each of their philosophies around the female body. I then explain how these two pieces fit together. Finally, I use the theories of bell hooks, which have greatly influenced my thinking in feminist theory, to draw in what I believe to be the underlying key factor in understanding the female experience: the bodily sensation of love.

THE ECONOMIC EFFECTS OF SKI RESORTS ON MAINE COMMUNITIES

Rachel Freierman ('09), Environmental Studies

This project uses GIS to map the fourteen ski areas in the state of Maine and the economies of the surrounding census blocks. The goal is to create an analysis of the effects of the resorts on improving local well-being. The main relationship studied is between the economy of the census block the ski area resides in and the surrounding census blocks. The measures of economic success include income, poverty status, occupation, and whether the housing occupancy is seasonal or year-round determined from the US Census Bureau. Other comparisons are made between the ski areas based on their relative size, which is determined by the vertical drop and the number of lifts and runs. The project attempts to determine how significantly the large industry of ski resorts affects local economies and whether there are then economic disparities between the town and the surrounding areas.

PHOTOJOURNALISTIC MANIPULATIONS OF REALITY: A GLOBALIZED FOUCAULDIAN ANALYSIS

Valerie Friedman ('07), Anthropology

This project is an anthropological study on how journalistic images are manipulated to create meaning, and how these meanings are interpreted by students at Colby College. Using fieldwork and interviews, I researched how students at Colby use different forms of media to obtiain their news. I wanted to further understand the relationship between the journalistic manipulations of reality and the ways that the students interpreted the role of the media in creating their perceptions of the world. I am arguing that the media has control over what people think and see. Because of the media's power over knowledge, the general public has become reliant on newspapers, magazines, the radio, internet, television broadcasts, and other forms of news coverage in order to be aware of what is happening in the world. Large corporations and businesses have taken control over the spreading of information, yet the internet is increasingly becoming the way for average people to spread information and ideas. My project also looks into how blogs have become an avenue of free information that is available to the public.

RECLAIMING THE POWER OF KNOWLEDGE: HOW THE INTERNET HAS CHANGED THE FLOW OF INFORMATION

Valerie Friedman ('07), Anthropology

The media plays a large role in the way Americans interpret and gather information about the news and about the world. Large corporations dominate the news media that becomes available to the public, and the internet has given rise to a new mode of distributing information. In many cases, newspapers and magazines use the internet to make their reading audience wider and more diverse, making the news available to any person who has a computer and internet connection. Recently, people have started to utilize the internet to reclaim their right to free information, by using blogs and other websites that enable the spread of information between peers. This not only makes information spread more quickly, easily, and cheaper, but it also puts all people in the position of giving agency to information, and it also allows people to discuss the news and news articles with each other.

USING GENETIC ANALYSIS TO TRACK THE SPREAD OF TICK-BORNE DISEASES IN MAINE

Sharon Fuller ('08) and Caitlin Rumrill ('08), Biology

Current statistics involving the occurrence of lyme disease (caused by Borrelia burgdorferi) in humans due to contact with ticks suggest that most of the disease is concentrated in the southern part of Maine. Since this part of Maine is also by far the most populated, this study set out to investigate whether the distribution of the disease organism in ticks is in fact more uniform. In addition to Borrelia burgdorferi, tests for Ehrlichiosis (Ehrlichia sp.), Babesiosis (Babesia sp.) and

tularemia (Francisella tularensis) were also conducted. Deer ticks (Ixodes scapularis) and dog ticks (Dermacentor variabilis) were collected from both urban and rural areas across the state of Maine. PCR of each disease-causing organism was carried out on every tick and positive tests were sequenced for further verification. The study was unsuccessful in obtaining enough samples to make conclusive statements about the spread of Borrelia burgdorferi in ticks. Results did indicate the possibility of Babesia occurrence in Dermacentor variabilis, a combination that has not previously been reported in the literature.

POLITICAL BIOLOGY: PETER KROPOTKIN AND THE DARWINIAN REVOLUTION

Brian Fulmer ('07), Science, Technology, and Society

Peter Kropotkin has been largely left out of the history of the Darwinian Revolution, and where he is included he is marginalized. My thesis attempts to show the importance of Kropotkin's work through his influence on the British socialist movement's reception of Darwinian ideas.

THE INFLUENCE OF HERON'S MECHANICS ON THE ROLE OF TEMPLES IN ALEXANDRIA

Caitlin Gallagher ('07), Anthropology

During the first century AD, Heron of Alexandria published Pneumonics, a compilation of mechanical designs. The designs included the use of air and water to produce noises, create illusions, and open temple doors. Later, during the Renaissance, scholars discovered Heron's texts, which shaped the use of hydraulics. Modern scientists recognize that Heron constructed the first steam turbine and provided the design for the modern steam engine. His mechanics, exhibited in Pneumonics, helped shape mysticism in temples as well. For example, temples increased their authority by charging patrons for holy water with which to cleanse themselves. Further, Heron texts proposed that mechanics had the same caliber of intellect as philosophers. His illusions, which viewers could not understand, increased the importance of scholars using applied mechanics. This study focuses on the power of technology; it provides an overview of the mystic qualities of technology in Alexandrian temple life during the first century AD.

PHYLOGEOGRAPHY AND DEMOGRAPHIC HISTORY OF GRAY FOXES, UROCYON CINEREOARGENTEUS

Julia Germaine ('07), Biology

In this study we examined the phylogeography of gray foxes (Urocyon cinereoargenteus) along the east coast of North America where three distinct sub-species exist: U. c. borealis, U. c. cinereoargenteus and U. c. floridanus. This last sub-species populates the Savannah River Site (SRS) in South Carolina. The SRS represents a protected population where gray foxes have not experienced hunting pressure for over 50 years and may be serving as an important source population for the surrounding harvested areas. Earlier work on this species used mtDNA sequence data to address the demographic history of east coast gray foxes. In order to better understand the range and dispersal of haplotypes, we added to the existing sample set of 103 individuals from seven states. Tissue samples collected from fur trappers have yielded an additional 209 individuals from twelve states, including five states not represented in earlier mapping.

THE EFFECTS OF ACUTE TESTOSTERONE EXPOSURE ON AGGRESSION IN ANOLIS CAROLINENSIS LIZARDS

Adrian Gilmore ('07), Psychology

This study investigated the hypothesis that testosterone could have short term effects on aggression, in addition to the long-term effects demonstrated in prior research. Twenty-four male green anole lizards were size-matched, paired, and placed on opposite sides of opaquely-divided glass tanks. One male in each cage was randomly assigned to either an experimental condition, wherein they were exposed to testosterone, or a control condition where there was no exposure. Aggressive displays were recorded during three periods of behavioral observation, in which the opaque dividers were replaced with clear dividers. After the final observation period, each pair was euthanized and serum samples were taken. No differences in the number or types of aggressive displays were found between experimental and control lizards in this experiment. Serum analysis for blood testosterone levels was inconclusive. These results do not support the hypothesized presence of short-term differences in behavior caused by exposure to testosterone.

LEVELS OF PROCESSING OF PAIRED ASSOCIATES AND RETROACTIVE INTERFERENCE

Natalie Ginsburg ('07), Psychology

The present study examined how different levels of processing affect retroactive interference. Participants learned two lists of word pairs (List 1 and List 2) by shallow encoding, deep encoding or no instructions. The shallow encoding word pairs rhymed, and the deep encoding word pairs

were semantically related. The participants were given a cued recall test in which the cue word used during encoding was presented. The participants were asked to recall the word it was paired with in the first list they learned (List 1).

ACCEPTING HELP WHEN IT IS OFFERED: AN INVESTIGATION OF SOCIAL ROLE THEORY IN COLLEGE-AGE MEN AND WOMEN

Nina Gold ('09) and Carrie Potter ('09), Psychology

Not yet available; can be e-mailed by May 1.

UNLIKELY ROMEO OR A MODERN DAY STEPIN FETCHIT?: HOW FLAVOR OF LOVE NEGATIVELY PORTRAYS THE AFRICAN-AMERICAN COMMUNITY AND WOMEN ON TELEVISION

Elani Gonzalez ('07), American Studies

Women and African-Americans historically have been under- or negatively represented on television. Because "reality tv" claims to represent "reality," we might expect it to avoid such negative stereotypes. However, I argue that the reality television show Flavor of Love continues to perpetuate negative and false perceptions of groups already underrepresented on television. I look at the way African-Americans and women have been depicted traditionally on television shows that have shaped our current ideals and stereotypes in order to see how Flavor of Love mirrors those same stereotypes. Furthermore, I ask why it is that this show is so popular and why people, especially people of color, want to see other African-Americans engaging in buffoonery similar to that in a minstrel show. Ultimately, I argue that the lack of media representation for these marginalized groups means that they crave to see themselves visually represented; however there is more at stake for these people because of the power of visual representation and the fact that we put so much on "seeing is believing."

THE CONFLICT IN FEMALE ATHLETES: DOES OBSERVER GENDER AND/OR ATHLETIC ORIENTATION AFFECT ATHLETIC PERFORMANCE?

Madison Gregor ('09) and Mary Snediker ('09), Psychology

This study investigated the possible psychological conflict in female athletes regarding the contradictory requirement to be aggressive while still remaining feminine when engaging in athletics. Research has yet to determine if heightened self-awareness enhances or hurts performance. Liebling & Shaver (1973) found that self-awareness causes performance on a task to suffer by posing a distraction that interferes with attention. While Wicklund & Duval (1971) concluded that self-awareness enhances performance by pushing a person to try harder. Perhaps the presence of males makes a female athlete"s gender salient causing a state of self-awareness. Female athletes were videotaped performing pushups, sit-ups, dips, and squats, and were told that male athletes, female athletes, male non-athletes, or female non-athletes would watch the videotape. It was expected that gender and/or athletic orientation would affect the degree to which these female athletes pushed themselves on the tasks. Participants had the option to complete anywhere from one and six sets of twelve reps for each task. After the exercises, participants completed both state self-esteem and evaluation apprehension scales to determine if observer gender or athletic orientation had a significant effect upon self-esteem. While data analysis failed to indicate significant results, a definite trend emerged. Participants in the female non-athlete observer condition tended to complete more reps and sets than participants in the female athlete observer condition. Significant results found that participants in the female non-athlete observer condition had the lowest performance self-esteem. Future research can focus on why female athletes tend to push themselves more when female non-athletes are observing their performance.

THE EFFECT OF IMAGINED SOCIAL PRESENCE ON EMOTIONAL RESPONDING

Jessie Guild ('08), Pamela Dudley ('08) and Danielle Preiss ('07), Psychology

The purpose of this study is to examine the implicit audience effect on emotional responding. We are observing the effects of the imagined presence of another person on facial displays and subjective reports of emotion in response to a neutral, amusing and disgusting film clips. In this study participants watch the film clips in one of three conditions 1) alone, 2) while imagining that they are in the presence of same-sex friend, 3) while imagining that they are in the presence of a stranger (prospective student, presumably same-sex). The data collection is still in progress. We hypothesize that imagined social presence (friend and stranger conditions) will elicit stronger emotional responding than the imagined situation without social presence (alone condition). We also believe the friend condition will elicit stronger emotional responding than stranger condition. Findings from this project will advance our understanding of how social context and motives influence emotional responding.

GENDER DIFFERENCES IN THE EFFECTS OF SOCIAL CONTEXT ON EMOTIONAL RESPONDING

Cheryl Hahn ('08), Psychology

This study compares the effects of social cues on emotional experiences of men and women. Literature suggests that emotional responses are influenced by the presence and expressiveness of other individuals (Hess, Banse, & Kappas, 1995; Jacobs, Manstead, & Fischer, 2001; Fridlund, 1991). We examined whether social cues influence the experience of emotions differently for men and women. Research on gender differences in self-construal (Cross & Madson, 1997) led us to expect that women's own emotional reactions would be more sensitive to emotional cues from other individuals than men's.

LASTING LOVER OR FLEETING FLING: THE EFFECT OF DESIRED RELATIONSHIP LENGTH ON THE EXTENT TO WHICH OTHERS' OPINIONS MATTER

Cheryl Hahn ('08), Megan Dean ('09) and Casey Lynch ('09), Psychology

The current study examined the effect of relationship length and negative peer ratings on heterosexual women's intelligence and attractiveness ratings. Women rated photos of men for attractiveness and intelligence for either a long- or a short-term relationship. Underneath the photos were peer ratings for the attractiveness and intelligence of the men. These ratings were either negative or neutral. Negative peer ratings significantly influenced both attractiveness and intelligence ratings; however, relationship length did not influence either attractiveness or intelligence ratings. These results support the hypothesis that women are influenced by peer ratings; however, these results do not support the hypothesis that women prefer different characteristics depending on the length of the relationship with a potential mate.

SOCIAL CUES AND THEIR EFFECT ON THE DEVELOPMENT OF LEARNED HELPLESSNESS IN MICE

Cheryl Hahn ('08), Biology

Learned helplessness is a condition in which an animal learns that the termination of a stressor is independent of its response to that stressor. Therefore, the animal does not attempt to avoid the stressful situation in future circumstances. This experiment specifically tested the hypothesis that learned helpless mice will respond differently to social cues than mice who continued to struggle during a tail suspension test (non-learned helpless condition) and mice not subjected to the tail suspension test (control condition). To examine responses to social cues, the distance traveled on a running wheel and the number of attempts to use that wheel when it was locked were observed. Half of the learned helpless and control mice could view a mouse with a working wheel, and half could view a mouse without any wheel. Control mice accumulated more meters on the running wheel than learned helpless mice and non-learned helpless mice. Learned helpless mice with social cues in their environment exhibited more running attempts than control mice and learned helpless mice without social cues. One possible explanation for the increased number of running attempts is that learned helpless mice have an increased drive to attempt a novel behavior when they are reminded of their desired outcome, the running wheel turning, through social cues. This increased behavior is only present when the behavior is novel and when they behavior cannot be completed successfully.

ANHEDONIA AND DEPRESSION: ANTICIPATION, CONSUMMATORY, AND RECALL DEFICITS

Kaitlin Hanley ('07), Psychology

Anhedonia, or the inability to experience pleasure, is commonly accepted as a key component of depression. However, very little research has differentiated between the anticipatory, consummatory, and recall deficits associated with anhedonia. Some research has suggested that depressed individuals experience cognitive distortions, such as a negative view of the future and a negative recall bias, though all three levels of experience have not yet been tested in one design. This study seeks to differentiate between each deficit in one design by asking participants to self-report on their anticipation a pleasurable stimulus (chocolate samples), their actual experience of the stimulus, and their later recollection of the stimulus. After data collection has been completed, the expected results will show deficits in the anticipation of and recollection of a pleasurable stimulus in depressed participants, while both depressed and control participants will report experiencing the same amount of pleasure while actually experiencing the pleasurable stimulus. This reflects the cognitive distortions involved in depression, while the actual, experiential capacity resembles that of the healthy population.

EGO DEPLETION AND CONTROL MOTIVATION IN A SELF-PRESENTATIONAL CONTEXT

Kaitlin Hanley ('07), Logan Berg ('08), Ira Panova ('07) and Alexander Shafer ('07), Psychology

Ego depletion, or a decline in the ability to control oneself after a cognitively tiring task, and control motivation, or the motivation to perform well to regain control after a control-depriving task, predict different performance results in a subsequent task after completing a cognitively difficult task. A sample of 98 male and female college students first completed either an ego depleting (ED) and/or control depriving (CD) task, then a modified Relationship Closeness Induction Task to determine performance on a non-important or important self-presentational task. The main effect for perceived importance and interaction with the ED and CD manipulation demonstrated better overall performance in important conditions, with ED participants performing the best. In non-important conditions, ED and CD participants performed the best. This shows that, when a situation is important, ego depletion can be almost entirely eliminated; however, when a situation is not important, the motivation one gains from a control deprivation experience is enough to at least reduce the effects of ego depletion.

TRANSCRIPTION TARGETS OF D-PAX2 ACTIVITY IN DROSOPHILA SENSORY SYSTEMS.

Katharine Harmon ('09), Biology

The transcription factor D-Pax2 is essential to the specification and differentiation of specific cell types in Drosophila sensory organs. Most notably, D-Pax2 controls the development of the shaft and sheath cells in the bristle and the cone and primary pigment cells in the eye. However, the number and types of target genes that D-Pax2 regulates is unknown. We have identified a group of potential D-Pax2 target genes by searching the Drosophila genome for the known DNA recognition sequence of the human Pax2 homolog. This site appears 64 times in the fly genome and many sites have proximity to genes expressed in the nervous system. We are currently screening some of the potential targets by in situ hybridization. We expect each true target to be expressed in D-Pax2+ cells, to lose this expression in D-Pax2 loss-of-function mutants, and to show coincident expression with D-Pax2 when D-Pax2 is ectopically expressed. Results of this screen will be discussed.

DETERMINING THE EFFECTIVENESS OF PLANTED CORRIDORS ON THE ATHERTON TABLELAND USING SMALL MAMMALS AS INDICATORS OF ENVIRONMENTAL FACTORS

Jessica Harold ('08), Biology

Small mammal trapping was used as an indicator of the effectiveness of planted corridors between rainforest fragments (258, 489, and 498ha) and continuous forest (80,000ha) on the Atherton Tableland in far north Queensland, Australia. The fragments and continuous forest were used as reference sites. Effectiveness was based on the ability of small rainforest mammals to utilize the corridor as habitat. Past corridor studies indicate that corridors are used by small rainforest mammals for movement if they are used as habitat. Reference sites had a significantly higher distribution of small rainforest mammals than corridor sites. Both rainforest and grassland species were found to inhabit the corridors. Over half of the species found in the corridors were rainforest specialists. Those species included Melomys cervinipes (24.14%), Isoodon macrourus (14.94%). Rattus sp. (8.05%), and Uromys caudimaculatus (5.75%) The presence of small rainforest mammals in the revegetated sites indicates that the corridors were effective. Vegetation assessments confirmed the presence of some rainforest characteristics in revegetation sites, and showed a trend of increasing similarity to mature rainforest with planting age. Effectiveness of the corridors will be improved as the planting mature. Increasing the width of the corridors will also increase their effectiveness.

WOULD YOU FLIRT TO GET WHAT YOU WANT OUT OF A MAN?: WOMEN, BENEVOLENT SEXISM AND POWER RELATIONS

Margaret Hayes ('09), Carla Jacobs ('09) and Ana Jijon ('09), Psychology

Benevolent sexism is defined as a set of interrelated attitudes toward women that are subjectively positive in nature, but may also view women in a set of restricted roles and in places of subordinance in society (Glick and Fiske, 1996). In contrast to hostile sexism, which is regarded negatively in our society, benevolent sexism elicits a mixed range of reactions in both men and women. This study was designed to look at the differences in the way women, either high or low in benevolent sexism, responded to a situation in which they were placed either in a position of power over a male, or in a subordinate position to a male. Based on findings from previous research, we expected to see that women placed in the low power condition, who were high in benevolent sexism, would be most likely to use their physical characteristics to prevent the male from reporting them. Women high in benevolent sexism are more likely to condone practices involving use of their physical appearance or flirting as acceptable behavior in obtaining something

from a man. In reading of a narrative, 31 women were placed in one of the two power situations, as either a Head Resident (HR) or a student, in which they accidentally broke a window. They were then asked to answer a series of questions regarding their use of flirting and/or their physical characteristics in an attempt to prevent a male witness, either an HR or a student, from reporting them. Contrary to our hypothesis, the results showed that women in a high status position, who were also high in benevolent sexism, were the most likely to use their physical characteristics. This finding might be explained by the fact that women in a position of power had something to lose, and therefore, they would consider any means possible to maintain their power.

DEVIOUS POLITICS, DEMON RUM: NEAL DOW AND THE BATTLE FOR THE FIRST MAINE PROHIBITION LAW

Andrew Herrmann ('07), History

History of the Maine prohibition movement in the mid-19th Century A discussion of the history of the early Maine temperance/prohibition movement led by the mayor of Portland, Neal Dow. This movement successfully passed the first statewide prohibition law in 1851. Unfortunately, Dow's overzealous enforcement of this law as mayor antagonized the local Irish community and opponents of prohibition, leading directly to the Portland Rum Riot, an 1855 civil disturbance that left one man dead, several more wounded, and permanently damaged Dow's political career. Broader themes covered will be the general background of antebellum New England Reformers, the role of the Know-Nothings in local and national politics in the 1850s, the end of the Second Party System, and the formation of the Maine Republican Party.

GLOBAL AND LOCAL HUMAN HEALTH IMPLICATIONS OF GLOBAL CLIMATE CHANGE

Julie Hike ('07) and Alisa Perry ('07), Environmental Studies

Global climate change is an area of great concern for health care professionals, environmentalists, and the general population alike. In particular, global warming and its repercussions have the potential to do great amount of harm to human health. This study examines the direct and indirect effects that exist and will emerge on the environment and health. The rising of sea-levels, increasing temperatures, and intensifying severe weather patterns will continue to have the consequences of increasing the spread of vector-borne diseases and heat-related mortalities, diminishing the water supply and quality for many populations. Maine is particularly vulnerable to some of these threats, including the encroaching Atlantic Ocean on its coastline. Unless measures are taken to decrease heat-trapping emissions into the atmosphere, damaging climate changes will continue and there will be more challenges to human health.

DEVELOPMENT OF MICROSATELLITE PRIMERS IN THE ANEMONE SPECIES METRIDIUM SENILE

Kelsey Hilton ('08), Biology

The sea anemone Metridium senile is widely used in cnidarian research, but little is known about this species' population structure. The ongoing purpose of this research has been to develop primers that will allow us to characterize microsatellite loci in M. senile for use in population studies. Microsatellites consist of DNA repeats that are highly variable from one population to another. They are surrounded by conserved regions, from which primers are derived. Our study consisted of two parts. First, we attempted to amplify regions of DNA containing 8 different microsatellite loci using PCR. This process enabled us to find one potential microsatellite sequence, the flanking regions of which were used to design primers. In the second part of the experiment, we screened for more microsatellite loci using primers obtained from recent studies of another species of anemone, Nematostella vectensis.

THE CULTIVATION OF THE BODY SHOP LLC: THE RHETORIC AND REALITY OF A 'FAIR TRADE' CORPORATION

Amanda Hilton ('07), Anthropology

The Body Shop is a well-known cosmetics corporation whose stores dot malls and shopping areas all over the world. Although the corporation prides and sells itself on its 'values', including 'Against Animal Testing, Support Community Trade, Activate Self Esteem, Defend Human Rights', and 'Protect Our Planet', its practices are not consistent with its marketed image. The Body Shop LLC presents its trading practices, particularly with indigenous peoples or peoples from the global south, as qualitatively different from that of other corporations, using the rhetoric of its 'Trade Not Aid' program to demonstrate its supposed interest in the welfare of its trading partners, such as the Kayapo Indians of Brazil. This study pursues the question of whether these claims, made by The Body Shop LLC, are valid, and how they are marketed as validated by the corporation. Are the communities that trade with The Body Shop LLC actually profiting, as the company claims, or are they forced into producing yet another arbitrary crop for a luxury niche market? How do the local

producers for The Body Shop LLC make their voices heard as both local and global actors? Is a polyvocal reading of the current trade situation between the Body Shop LLC and its local producers possible, given the drastically different access to image-building and the media available to local producers and the global corporations they sell thier products to? Will the voices of The Body Shop LLC's local producers ever be given the same power and influence as the voice of the company they produce for?

HORACE MANN AND COMMON SCHOOLS: MORAL ENLIGHTMENT AND ECONOMIC OPPORTUNITY

Christopher Hoffman ('07), History

Horace Mann (1796-1859) is widely recognized as one of the most influential figures in the history of American education. Mann worked from 1837 to 1848 as the first Secretary of the Massachusetts Board of Education, during which time he fought to improve, centralize, and increase the popularity of the generally inadequate, disorganized, and poorly attended schools. This project focuses on Mann's educational philosophy, its influences, and its evolution as expressed in Mann's arguments for these reforms. Several important factors formed Mann's educational philosophy, most notably the educational ideas expressed during the American Revolution, as well as his close relationship with leaders of the Unitarian church. From these factors came a liberal utilitarian ideology that was central to Mann's writings on education. He believed in the importance of education for the preservation of the American Republic. More prominently, however, he believed in the infinite improvement humankind could experience through universal education. Mann consistently used arguments in this vein throughout his first four years as Secretary of the Board. Throughout this time, however, Mann felt increasing political pressure against his position and the centralized system of public education from individuals who did not inherently value education as Mann did. Thus, Mann reformed his arguments to include the economic value of education to solidify his position and the future of universal education by thwarting his political opponents. His argument was effective—neither his position nor organized education were seriously challenged for the remainder of his career.

MEANINGFUL PARTICIPATION: THE BENEFITS OF CLIMATE CHANGE POLICY TO BRAZIL AND PROSPECTS FOR THE DEVELOPING WORLD

Mariah Hudnut ('07), International Studies

Before the Kyoto Protocol entered into force in February, 2005, one of the most hotly debated issues was the participation of developing countries. While countries such as the United States (which ultimately rejected the protocol and withdrew from negotiations) claimed that developing countries such as Brazil, China, and India account for a large portion of the world's emissions, and thus should be subject to emissions reductions targets, developing countries argued that such targets would unfairly hinder their capabilities to develop. The protocol finally entered into force with the clause that developing countries must 'meaninfully participate' in the international effort to curb global warming, but did not specify any targets for these countries. Now, just over a year after the protocol's entry into force, it seems that the larger developing countries are not only able to meaningfully participate in climate change efforts, but that they are actually benefiting from the opportunities presented by climate change policy. In this paper, I describe the ways in which Brazil is benefiting from climate change policy, and use Brazil's case to evaluate whether other large developing countries, such as China and India will be able to follow Brazil's example. I then offer some insights into what kind of participation can be expected from developing countries in the next round of climate change negotiations.

THE PHYSICS OF PERCEPTION IN TILT-TRANSLATION MODELS

Julian Jacobson ('10), Mathematics

Throughout the course of human history, we have pondered the nature of our perception of the world and the events around us. But many times what we perceive is not in fact what is actually happening. This occurs most notably in a human's perception of motion. Without visual or other sensory cues, human self-perception of motion is found to differ greatly from the actual motion. This study utilizes a seat affixed to a track with both tilt and translation capabilities to observe the self-perception phenomenon. A careful examination of the physics of the seat motion allows us to produce a model that will properly simulate the perception of subject on the moving seat. We find that the subject feels a swaying motion as opposed to a strict linear translation and understanding the forces on the body gives us the proper tools to explain this discrepancy.

MISSISSIPPI RIVER FLOOD CONTROL: A PRIORITY ANALYSIS USING GIS

Lent Johnson ('07), Environmental Studies

In the post-Katrina era of disaster preparedness, the importance of monitoring and maintaining

flood protection structures has gained a level of national attention. The Mississippi River has hundreds of miles of levees which have played an important role in protecting people, their land, and other resources for decades. However, with the great number of levees and a limited amount of human and economic resources for maintenance, a question of priority arises in ensuring that the most crucial flood protection structures are properly maintained. By what standard should these priorities be assigned? I explore this question by examining the comparative values of land that levees protect along the Mississippi River, from the Missouri/Iowa border near Keokuk, IA to the Mississippi's confluence with the Illinois River north of St. Louis, MO. I use three different metrics for land value: the human population, agricultural farmland, and wildlife habitat protected by the levee. Using GIS analysis of census, land use, and habitat data, we are able to quantify the resources that any single levee is responsible for protecting, and thus prioritize the importance for maintenance of these levees.

PLANETARY NEBULAE IN M82: KINEMATIC AND PHOTOMETRIC ANALYSIS

Lent Johnson ('07), Physics and Astronomy

Using an on-band/off-band filter technique, we identify 114 planetary nebulae (PNe) in the edge-on spiral galaxy M82 using the FOCAS instrument at the 8.2m Subaru Telescope. Radial velocities were determined for 100 of these PNe using a method of slitless spectroscopy, from which we obtain a clear picture of the galaxy's rotation. We find evidence for a Keplerian decline in M82's rotation curve, in agreement with results derived by CO(2-1) and HI measurements. These results affirm the use of PN as effective, accurate kinematic probes of galaxies. [OIII] emission line photometry of the PNe yielded the planetary nebula luminosity function (PNLF) for the galaxy, allowing us to derive a distance measurement. We confirmed the validity of our PN identifications with H observations made using the ACS instrument on the Hubble Space Telescope. Our distance determination is consistent with other measurements made of the M81/M82 group using Cepheid variable stars and the tip of the red giant branch (TRGB) technique. This work was conducted in a Research Experience for Undergraduates (REU) position at the University of Hawaii's Institute for Astronomy and funded by the NSF.

CIRCADIAN PATTERNS IN THE INNATE IMMUNE SYSTEM OF ZEBRAFISH

Jessica Kaplan ('07), Biology

There is increasing evidence of neuroendocrine influence on the mammalian immune system, including circadian patterns of gene expression and leukocyte activity. To investigate whether immune function in zebrafish (Danio rerio) follows regular cycles, we have focused on respiratory burst and phagocytic activities in immune cells from the anterior kidney, a principal lymphoid organ in fish. Respiratory burst and phagocytic potential was assessed at four hour intervals over twenty-four hour cycles. Previous experiments revealed a circadian pattern of respiratory burst in unstimulated cells, with a significant drop in activity between 6 and 10 a.m., then a steady rise back to the peak levels exhibited during the night. We examined the kinetics of the respiratory burst response and found a daily pattern in the time it took to reach the peak stimulation index (the fold-increase in respiratory burst activity induced by added stimulants), with the longest time occuring at 6 a.m. and then steadily dropping over the course of the day. Phagocytic experiments revealed that the amount of bacteria being engulfed by the kidney phagocytes varied significantly throughout a 24-hour period, reaching a peak at 10 a.m. before steadily declining. These results allow the potential to evaluate factors that may control circadian patterns of the immune system, such as melatonin.

HOMELESSNESS IN CALIFORNIA: USING GIS TO RELATE DENSITY OF POPULATIONS WITH SERVICES AND RESOURCES PROVIDED FOR THE HOMELESS

Jamie Kline ('07), Environmental Studies

Where is homelessness most prevalent in California? Through GIS and statistical analysis, the study shows that the majority of homelessness occurs in urban areas. Verifying these results, the study attempts to research and identify other factors influencing homeless distribution in California. After examining many different indicators on a county by county basis, the study concludes that total population, availability of shelters, weather, and population density are the major factors influencing homelessness.

MARINE OSTRACODES FROM THE LATEST PLEISTOCENE OF CENTRAL MAINE: EVIDENCE FOR PALEOSALINITY AND PALEOBATHYMETRY IN THE WANING PHASES OF MARINE EMERGENCE

Jamie Kline ('07), Geology

Samples were taken from each of four diffusely fossiliferous pockets within the upper 6.5 m of shelly marine Presumpscot Formation silts in an abandoned gravel pit in Norridgewock, Maine, at

approximately 44 o 43.1'N, 69 o 48.9'W. Separate small samples were taken for ostracode and foraminiferal analyses, and large bulk samples were collected for molluscan faunal study and radiocarbon age determination. Four to seven species of ostracodes were identified in each of the samples. The most abundant species was Heterocyprideis sorbyana, comprising 40-80% of the total fauna in each sample, while remaining fauna included Cytheropteron spp. (particularly juveniles), Finmarchinella spp., and Cytheromorpha sp. A (of Mcdougall et al.). The high abundance and consistent distribution of Heterocyprideis sorbyana throughout the samples, as well as the presence of Cytheromorpha sp. A. in at least one of the samples, are consistent with shallow water, near shore, depositional environments. However, the presence of Cytheropteron spp. and Finmarchinella spp. indicate instead a marine environment of inner to middle neritic water depths, with fairly stable temperature-salinity conditions. Collectively, this suggests an estuarine environment, exhibiting seasonally reduced salinity conditions and frigid to sub-frigid water temperatures. The abundance of juvenile Cytheropteron is consistent, because sudden freshwater influx in warmer months would reduce salinities such that it was no longer suitable for their survival. On the other hand, the euryhaline, eurythermal, and eurytopo Heterocyprideis sorbyana would have tolerated these seasonal changes, consistent with the abundance of mature specimens seen in all samples.

THE ORIGINS OF THE NORRIDGEWOCK SAND PLAIN, SOMERSET COUNTY, MAINE

Newton Krumdieck ('07), Geology

The Norridgewock sand plain is a broad, gently sloping feature covering ca. 15 km2 in southern Somerset County, Maine, in the Norridgewock and Hinckley, ME, USGS 7.5-minute quadrangles. A study to determine the probable origin of the sand plain was conducted using topographic maps, aerial photographs, outcrops, test auguring, unpublished borehole data, grain-size and mineralogic analyses, and ground-penetrating radar (GPR). Plain sands have a maximum thickness of at least 15 m and pinch out both to the south and southeast. The sand is predominantly moderately well-sorted subrounded fine to medium sand of lithic fragments, quartz, and feldspar. The sand plain is encircled by higher ground, including an esker, higher plain, subaqueous fan, moraines and bedrock ridges. Rare dunes mineralogically identical to the main sand plain occur on the margins; slip face dips indicate winds from the NW. Basal Quaternary sediment is a late Wisconsinan till, overlain by postglacial Presumpscot Formation silts and fine sand; uppermost Presumpscot silts yielded marine fauna indicative of shallow water, and 14C ages of 13,800-14,200 cal years BP. GPR lines show much complexity in the subsurface, with multiple channels cut into the Presumpscot Fm.; the largest is ca. 100 m wide and 7 m deep. This is tentatively interpreted to have been an early post-regression channel containing part of the ancestral Kennebec drainage, which was then clogged with sediment and abandoned. The only likely outlet for such a channel is the modern lower course of Martin Stream, but this seems inadequate. Initial interpretations were that surficial sands represented emergent nearshore marine sands of the Presumpscot Formation. However, sand plain material may in fact be distal Embden Formation fluvial sediments.

EFFECTS OF ENVIRONMENTAL CONDITIONS ON CLASS-1 INTEGRON MEDIATED HORIZONTAL GENE TRANSFER IN AEROMONAS SALMONICIDA

Kristina Langenborg ('09), Brittany Thomas ('10) and Zachary Zalinger ('09), Biology

A QUANTITATIVE TRAIT ANALYSIS OF THE LXS RI PANEL

Sarah Langley ('07), Physics and Astronomy

The LxS RI panel is a new recombinant inbred mouse panel created from the Inbred Long Sleep and Inbred Short Sleep laboratory mouse strains. This is the first mouse RI panel that has enough statistical strength for Quantitative Trait Loci (QTL) analyses. Quantitative traits are phenotypes, such as heart disease and diabetes, which are caused by interactions of genes, networks and environmental factors; QTL are places in the genome that affect these traits. This study focuses on the QTL analysis of bone traits within the RI panel. The genetic makeup of the panel differs from the standard QTL crosses, so in addition to the standard analysis, a new modeling function was created in order to accurately determine the QTL of interest.

EXPERIENCING TRAUMA: A PERSONAL ACCOUNT AND ANALYTICAL STUDY OF HOW PEOPLE EXPERIENCE AND MANAGE THE EFFECTS OF TRAUMA

Phoebe Larkin ('08), Women, Gender, Sexuality

A few months ago I spent two weeks in the Dominican Republic as a translator for a medical team of nurses, doctors, and nursing students who set up free health care clinics for local people in a number of remote villages in the mountains. On the fourth morning, one of the trucks carrying people on my team had a terrible accident. The truck slid backwards off the road and down a very steep incline. Though most people walk away, albeit quite bruised and banged up, two women

were seriously injured and one of them died within minutes of the accident. Though lucky enough to be in the other truck, I was present at the scene soon after the accident and was involved in all of the chaos that ensued. Though everyone from my team stayed on to finish the two weeks, there was much grieving and shock to be dealt with, both individually and as a group. This paper stems from my experience in the aftermath of the accident. The way in which myself and others dealt with and reacted to this tragedy surprises and interests me, which is partially why I chose to explore the effects of trauma and how it changes people both immediately and long-term. In addition to this, I have also used this paper as an opportunity for personal reflection, including accounts of my own experience as a way of helping myself come to terms with the effects of this accident and the changes it has brought about in me.

THE MOVEMENT OF THE GASTROPOD LITTORINA LITTOREA IN THE INTERTIDAL ZONE DURING THE ONSET OF WINTER

Jonathan Lefcheck ('09), Biology

The movement of the snail Littorina littorea on the North Atlantic coast is poorly understood. Most research has concentrated on the vertical distribution of the snail, and suggests that it prefers the low intertidal zone where its food source is most plentiful. In the winter, this distribution is reinforced by a documented seaward migration of snails from the high intertidal zone in response to falling temperatures. In this paper, I examine the individual movements and recovery of snails in response to the onset of winter, and propose that falling water and air temperatures drive the majority of snail movement within the intertidal zone, and that water temperature has the greater effect. I also examine the possibility that, in addition to a seaward migration, winter weather patterns in the Gulf of Maine and their effect on the ocean may encourage the wintertime vertical distribution of snails. Finally, I examine the possibility that populations of snails in the comparatively inhospitable high intertidal zone may endure the winter if given access to proper resources.

OF MOUSE AND MAN

Katherine Lillehei ('07), Psychology

Initially presented will be a project involving a model of anorexia in mice. Various animal models, including separation-induced diet restriction in mice, have been used to mimic the effects of eating disorders, specifically anorexia. Recent research has indicated that tyrosine, an amino acid, can actually help in preventing insufficiencies of hippocampal activity in anorexia in female mice (Avraham, Bonne, & Berry, 1996). This research has not addressed male mice, however, and there is significant evidence that anorexia in the different sexes have different physiological bases. Therefore, the intention of this experiment was to show if, and in what ways, male and female mice differentially respond to tyrosine. Reasons for discontinuing this research will be discussed. Additionally, recently analyzed data regarding skin conductance and cardiac measures in depressed women will be presented. These women were exposed to happy, sad, and neutral video clips and the research looked to replicate findings that skin conductance is lowered in depressed females. Physiological responses to the various stimuli were also analyzed.

FORAMINIFERA FROM THE PRESUMPSCOT FORMATION: EVIDENCE FOR PALEOSALINITY AND PALEOBATHYMETRY IN THE WANING PHASES OF MARINE EMERGENCE OF CENTRAL MAINE

Elizabeth Littlefield ('07), Geology

In central and coastal Maine, the immediately postglacial record is predominantly one of marine submergence and subsequent re-emergence of the land. The timing of this re-emergence and character of the initial landscape are of particular importance and interest. A sample was taken from each of four diffusely fossiliferous pockets of shelly marine silts in an abandoned gravel pit in Norridgewock, Maine; all samples were collected from within the upper 6.5 m of the massive marine silts of the Presumpscot Formation. Small samples were taken for ostracode and foraminiferal analyses, and large bulk samples were collected for molluscan faunal study and radiocarbon age determination. Radiocarbon dating of these samples indicates that the Presumpscot Formation was deposited 13,700-14,200 calendar years ago. This presents initial results of the study of the foraminiferal fauna recovered from these deposits. The dominant foram species present in the samples was Elphidium excavatum forma clavata, with Protelphidium orbiculare, Elphidium incertum, Buccella frigida, and Globulina glacialis in decreasing abundance. This assemblage indicates the following paleo-depositional environment: 22-28 ppt salinity, -1 to 15&#65533;C temperature, and less than 40 m water depth. The foraminifera were likely deposited in a brackish marginal marine setting during the marine flooding of Maine.

AFRICAN-AMERICAN INFLUENCES ON BARBERSHOP HARMONY

Ian London ('07), Music

AFRICAN-AMERICAN INFLUENCES ON BARBERSHOP HARMONY Prior to the institutionalization of Barbershop by composers and educators, the Barbershop genre of quartet harmony was characterized by the improvised embellishment of chords at emotionally-important moments, resulting in spontaneous chords us for aesthetical purposes (rather than functional, from a western classical music theory standpoint). The first practitioners of Barbershop music were predominantly amateur African-American musicians, whose lack of formal music training enabled them to ignore the rules of classical western music theory. While the transcription and institutionalization of Barbershop by Sigmund Spaeth and other white musicologists has kept the "Barbershop chords" intact, Barbershop without improvisation (as it is thought of and performed to this day) is an inaccurate portrayal of the essence of the genre. In order to assess the extent of the influence of African-American musical vernacular on the formation of the Barbershop genre in the late 19th and early 20th centuries, I will be examining representative examples of pieces and groups from the period roughly 1880-1940. Understanding Barbershop, a specific genre of quartet close harmony, is difficult without first becoming familiar with its antecedent and contemporary cousins: Volksleider, African-American spirituals, minstrelsy, jubilee, tin pan alley, gospel, and early rhythm and blues. Through analysis of groups, pieces, and through research of existing academic material on the subject, I intend to show that African-American musical vernacular was the crucial element that distinguished Barbershop from previous forms of close harmony.

MEASURING ULTRASONIC COMMUNICATION BETWEEN MOUSE PUPS AND ADULT MOTHER MICE

Kate Ludwig ('08), Biology

In this study I measured the ultrasonic communication between mouse pups and two maternal females, one of which had given birth to the pups and the other who had raised them, to determine which maternal female would have a greater influence on the communication attempted by the pup. There was no significant difference in the number of distress bouts expressed by pups in response to cues from the biological mother and foster mother test groups. The data support that mouse pups call to maternal females regardless of genetic relatedness, and that pups invoke help from maternal females, regardless of the amount of interaction between the female and the pup. Further testing must be done to strengthen these conclusions. Nonetheless, results suggest that the role of social interaction is just as important to mouse pup development as is the role of genetic relatedness because the pup relies so heavily on its caretaker during early stages in life.

AN INJECTION-LOCKED DIODE LASER FOR COLD RYDBERG ATOM EXPERIMENTS

Margaret Martei ('07) and Anders Wood ('07), Physics and Astronomy

A free-running, temperature stabilized diode laser has been injection-locked to an external cavity diode laser for use in cold Rydberg atom experiments. Cold rubidium atoms in a magneto-optical trap (MOT) are excited to Rydberg states using a 10 ns laser pulse. The Rydberg atoms spontaneously ionize due to dipole forces, and the collisional ionization dynamics are observed as a function of atom density and principal quantum number of the Rydberg state, n. The injection-locked diode laser will be used as a repumper in conjunction with a dark spontaneous-force optical trap (SPOT) to increase the Rydberg state density. We will report on the injection-locked laser performance and the effect of increasing the Rydberg state density on the ionization dynamics. Scientific Section: Atomic and Molecular Physics. PACS: 39.25.+k, 34.60.+z, 33.80.Ps, 33.80.Rv

PERSONAL POLITICS: THE INTERSECTION OF FEDERALISM AND MARRIAGE

Alison McArdle ('07), History

By the mid-1780s the young American nation experienced a political crisis. The loosely knit Articles of Confederation had not met the needs of the American people. This project focuses on the Federalist campaign to persuade the American citizenry to make the calculated choice in favor of the United States Constitution. To sway the people, James Madison, John Jay, and Alexander Hamilton published The Federalist Papers in magazines throughout the country. A focus of the essays was to make the people recognize the gravity of their choice for a government and how this choice would either lead the nation on the path to happiness or misery. Similarly, also during the mid-1780s to early 1790s, many Northeastern magazines began to print an increasing number of articles regarding marriage. The same line of argument that the Federalists used to persuade the country to choose the Constitution appeared in the magazines" marriage articles in the discussion of the gravity of the choice of a spouse. In a strikingly similar way to The Federalist Papers, the marriage articles used the idea of choice and its direct connection to a life of happiness or misery. This project examines both of these discussions of choice and happiness as a means of investigating a time when the most public discourse of government and private concerns of marriage intersected, both linked by the idea of and repercussions of choice.

POWER AS A THREAT

Lauren McClurg ('09), Kirstin Miller ('09) and Veronica Romero ('09), Psychology

This experiment is derived from the theory in psychology called stereotype threat which suggests that people who belong to a minority group that is closely associated with a negative stereotype in a given domain will perform worse in said domain when their minority status is made salient (women vs. men in math). Similar results have been noted in groups that are normally considered privileged in their status (white men vs. Asian men in math); this phenomenon is called Identity threat. We are interested in testing if the decrease in performance is due to a negative stereotype, or a sense of threat to their normal power status. Male and female participant�s performance in three domains (golf, math and anagram) was measured in order to record the effects power had on their capabilities. In the study the participants were randomly assigned into either a high or low power condition and then primed into the given psychological state through an essay task. Results in performance for these three domains show a steady trend in which male participants perform better in high power; whilst female participants perform better in low power situations. In the anagram task there was a significant difference between the men�s performance in high and low power. A similar trend appeared in the math and golf scores however, this was not significant. For the females in the study there was a marginal difference between the females' performances in the anagram and golf tasks where the low power females outperformed high power females; a similar trend appeared in the results of the math task. The results obtained show that men accustomed to positions of high power in society perform better in high power conditions while women accustomed to varying levels of power in society are not threatened by power.

THEORY VERSUS REALITY OF AGRICULTURAL DEVELOPMENT: A STUDY OF GICS AND AID ORGANIZATIONS IN NGOUND�R�, CAMEROON

Nancy McDermott ('08), International Studies

Agricultural development, as a means of poverty reduction, is a proposed goal of the Cameroonian government and international organizations alike. Many development initiatives have been launched with the proposed goal of helping farmers to advance in their work and lives. Nonetheless, many still live in poverty. In this study I examine the reality that faces agricultural GICS (Groupes d'Initiative Communes) in the area of Ngound�r�, Cameroon in their efforts of development. The most serious of their constraints include an evident lack of information available to these organizations, and the presence of an ineffective system of top-down aid distribution. Faulty projects prevalent in both past and present efforts have left many agricultural workers discouraged at the prospect of aid in the future. Through examining different types of development programs – governmental, private, loan-based and charity-based, I aim to determine what goes wrong with the realization of their efforts and proposed goals. Finally, I will suggest changes that are necessary in order to move forward in development efforts based on the current context.

MATE CHOICE IN THE ZEBRA FINCH TAENIOPYGIA GUTTATA

Amanda McGarry ('07), Biology

NATIVE POLYACRYLAMIDE GEL ELECTROPHORESIS ASSESSMENT OF DNA BENDING UPON DIEPOXYBUTANE AND EPIHALOHYDRIN CROSS-LINKING

Erin McGowan ('08), Chemistry

Bifunctional alkylating agents such as diepoxybutane (DEB) and the epihalohydrins have the potential to form DNA interstrand cross-links. In order for the short tether of such agents to span the 9-Å distance between distal deoxyguanosines at the GGC consensus sequence for DEB cross-linking, DNA distortion seems likely. We have been investigating DNA bending upon reaction of these agents with DNA duplexes containing a central GGC site. We used denaturing polyacrylamide gel electrophoresis to purify cross-linked DNA and then ligated the products for analysis via native polyacrylamide gel electrophoresis. DEB cross-linked samples had a retarded electrophoretic mobility compared to ligated, unmodifed DNA of the same sequence, suggesting that cross-linking does indeed result in bending. The degree of bending was then calculated using an established empirical relationship between gel mobility and bending. Our goal is to provide insight into the structures of the cross-linked lesions, including the direction of the bend.

SILENT KILLERS: A COMMUNITY ASSESSMENT OF OUTDOOR AIR POLLUTION IN MAINE

Emma McLeavey-Weeder ('09) and Lawson Hill ('09), Environmental Studies

The average person inhales 20 cubic meters of air every day. Included in this air are many pollutants, both anthropogenic and natural, that have the potential to adversely affect humans. Our research focuses on two of these air pollutants: PM10 and smaller (particulate matter with an aerodynamic diameter of 10 microns or smaller) and ground level ozone. PM2.5 and ground level

ozone have been linked to higher incidences of asthma, in children and adults, reduced lung function, premature mortality, and heavy metal poisoning. Certain meteorological events can augment these effects, making particular days or times of the year especially hazardous. It has been demonstrated that people in the Northeastern U.S., especially Maine, are more susceptible to these health effects due to higher exposures of PM2.5 and ground-level ozone. Maine has the second fastest growing rate of occurrence of asthma in the nation, with 9.4% of adults and 13% of children affected. Scientists believe that exposure to PM2.5 and ground level ozone plays a big role in such a high and quickly growing asthma incidence. As residents of Maine, we are very concerned with the air pollution in our state and the adverse effects it may have on Maine citizens. Through this report, we wish to clarify and illustrate the exposure of Mainers to harmful air pollutants as well as the potential for ill health effects through the consolidation of several studies and data sets as well as independent research in the Waterville- Winslow area.

GREEN BUILDING IN MAINE

Alexander McPherson ('07), Environmental Studies

With green building taking its hold of Colby campus and the nation's gaze, I thought a contextual analysis of Colby's progress in the field would be both useful and interesting to the public. This study presents a qualitative and quantitative analysis of the state of green building practices in the state of Maine.

WETLAND REMEDIATION BY AROOSTOOK COUNTY POTATO FARMERS: A GIS ANALYSIS

Alexander McPherson ('07), Environmental Studies

With impending legislation threatening their established practices, the potato farmers of Aroostook county, Maine, face very real pressures. One piece of law about to be enacted would restrict their ability to draw water from streams to 'finish' their potatoes to a commodity grade. To solve this problem irrigation ponds need to be dug, but where is a very difficult question. Accepting that the best pond sites will disturb wetlands which will need to be remediated elsewhere, locating areas in which to rebuild and replace these disturbed wetlands is an even more complicated problem to solve. This presentation will describe the use of GIS to analyze this problem, as well as present preliminary results.

ARTIFICIAL NEURAL NETWORK FOR DYNAMICAL MOTION

Bridge Mellichamp ('07), Mathematics

Humans are constantly undergoing complex motions which must be interpreted by the brain quickly and accurately. The brain's ability to accurately interpret motion is essential on a daily basis and has applications of interest in aviation safety and the treatment of vestibular disorders. However, the brain's functions are also extremely complex and it is unknown precisely how the brain interprets motion. Creating an artificial neural network capable of correctly computing undergone motion is vital to advancing the knowledge of how the brain can and does interpret motion. In MatLab's Neural Network Toolbox, artificial neural networks were created and trained to adequately compute the characteristics of motion for 1D and 2D linear motion. Expanding the model to include 2D angular motion decreases the network's ability to accurately compute the characteristics of undergone motion. Optimal designs for artificial neural networks, including training function and layer characteristics are being explored to increase the accuracy in computing motion.

NEGOTIATING THE NEXT CLIMATE TREATY

Renzo Mendoza Castro ('07), Environmental Studies

Scholars and policy pundits have advanced various designs of a climate change treaty to succeed the Kyoto Protocol. Each of these designs claims to correct the defects of the current agreement. But what kind of a treaty is likely to pass the test of international and domestic politics and negotiations? Can we learn something about the hurdles and opportunities for climate cooperation from negotiations simulations in the classroom? The paper engages these questions by analyzing an experimental course design organized around simulated negotiations of the next climate change treaty. Unlike classroom simulations which rely on hypothetical scenarios, this course sought to approximate actual domestic and international constraints within which countries negotiate. The paper details the structure of the course, the ways in which it familiarizes students with domestic and international climate politics, and the components of the negotiations module. The analysis examines both the pedagogical and policy implications of the negotiations process and outcomes.

THE CONTACT ZONE: TEACHING AND LEARNING IN RURAL INDIA

Suzanne Merkelson ('09), Sameera Anwar ('10), Ratul Bhattacharyya ('09), Joel Biron

('07) and Christopher Zajchowski ('07), Music

IN JANUARY 2007 27 COLBY STUDENTS TRAVELED TO KALIMPONG, INDIA TO TEACH AT THE GANDHI ASHRAM A SCHOOL FOR THE POOREST STUDENTS OF THE POVERTY STRICKEN CITY. EACH COLBY STUDENT WENT WITH DIFFERENT OBJECTIVES FROM COMPLETING VARIOUS ETHNOGRAPHIC PROJECTS TO CREATING A QUILT. IN THE COURSE OF FULFILLING THESE GOALS, WE ENCOUNTERED CHALLENGING QUESTIONS: CAN WE AS AMERICANS MAKE A MEASURABLE DIFFERENCE FOR THESE CHILDREN IN AN EVOLVING POST-COLONIAL NATION? HOW HELPFUL OR EDUCATION WAS OUR PRESENCE TO THE PARTIES INVOLVED? IS THE AMERICAN DREAM NOT AS UNIVERSALLY PERVASIVE AS WE ONCE THOUGHT? WE WILL ANALYZE THE PROJECT IN TERMS OF CULTURAL FUSION AND DISCUSS ITS POSSIBLE FUTURE.

DEVELOPMENTAL TIMING OF EXPOSURE TO AN ENRICHED ENVIRONMENT IN RATS

Marissa Meyer ('07), Psychology

Examines the role of timing of exposure to differential environments on brain to body mass ratio and spatial memory. Rats were initially (postnatal days 2 until 22) housed in either an impoverished or standard environment with their littermates and mother. Upon weaning, subjects were moved to standard housing (2 or 3 per cage) and exposed to 6 hours per day of a novel, group environment. This novel environment was either enriched or standard. After approximately 1 month of exposure to 6 hours per day of the novel environment, subjects' spatial memory was tested over an 8 day period using an 8-arm radial maze task. Upon completion of behavioral testing, animals were euthanized. Brains were then collected and their masses obtained. It was hypothesized that those rats exposed to an initially standard and then a novel enriched environment would show the greatest spatial memory capacity and brain to body weight ratios. Results do not, however, support this hypothesis and instead indicate that there may have been significant differences between each litter that were not overcome by the environmental manipulations.

ELEPHANT-BAT INTERACTIONS: COMMENSALISM AT WORK?

Jennifer Mizen ('08), Biology

Mutualisms and commensalisms involving birds and megaherbivores have long been noted by ecologists. Documentation of similar relationships between aerial nocturnal gleaners and herbivores that are active at night, on the other hand, is absent from the biological literature. To determine if such a relationship is present between bats and elephants, we compared bat activity in the Kruger National Park, South Africa, first in the presence of elephants and then in their absence, controlling for habitat and time of day. The activity of clutter-feeding bats, along with feeding success, differed significantly in comparison to other functional groups, suggesting that such a commensalism exists. If this is the case, this pioneering study has significant implications on conservation, especially with respect to how elephant management strategies will affect local clutter-feeding bat populations.

CHARACTERIZATION OF THE PERVASIVENESS OF MERCURY AND ANTIBIOTIC RESISTANCE DUE TO CO-SELECTION USING POPULATION STUDIES OF SPHAGNUM CORE SAMPLES DATING BACK 2000 YEARS

Jennifer Moody ('07), Aaron Olcerst ('07) and Leslie Wardwell ('08), Biology

Increasing incidence of antibiotic resistance in bacteria has highlighted the importance of understanding the factors underlying microbial horizontal gene transfer. The extreme pervasiveness of antibiotic resistance in bacteria indigenous to Maine has led to the hypothesis of co-selection in which selection for mercury resistance indirectly selects for antibiotic resistance. To establish a control group relevant to Maine that does not exhibit these resistances, specifically bacteria from the pre-antibiotic era, core samples were extracted from three sphagnum peat bog mats. Carbon dating revealed that these core samples dated back approximately 2000 years. Population studies were conducted using samples from each of the cores. Isolates were identified using 16S rRNA gene sequencing and characterized in terms of mercury-, zinc- and antibiotic-resistance. The population studies of Round Pond bog revealed that bacteria taken from core samples dating back 2000 years showed no significant difference in mercury resistance compared to more recently dated samples ($p=.14$). In support of the co-selection hypothesis, these mercury-resistant isolates were also found to be multiply antibiotic resistant, despite originating in core samples dating back to the pre-antibiotic era. Due to the geochemical characteristics of sphagnum peat bogs, including heavy metal sequestration, high levels of zinc, and fluctuating water levels, this experimental system did not yield the expected negative control. What this study did show, however, was that indigenous bacteria acquired antibiotic resistance in environments devoid of antibiotics, thereby supporting the co-selection hypothesis.

CONGRUENCE OF EMBEDDED STUDY QUESTION AND TEST QUESTION TYPE AND ITS

IMPACT ON ANXIETY LEVELS AND READING COMPREHENSION TEST PERFORMANCE

Alexandra Morrison ('07), Psychology

Previous research suggests that test anxiety may be due to a deficit in study and metacognitive skills. The present study examined whether study skills that follow the transfer appropriate processing model would improve online monitoring and thus lower test anxiety during reading comprehension tests. Test anxiety was measured through self report measures, and transfer appropriate processing was manipulated through detailed and conceptual questions embedded in passages of text. Study questions were either congruent or incongruent with questions on the exam. This study had a 3X2 between subjects design (encoding task: conceptual embedded questions, detailed embedded questions, read only) X 2 (type of test: detailed vs. conceptual). Results showed a significant interaction between study type and test type, revealing that congruence of study and test type lead to more successful testing performance than incongruent or read conditions. Self reported anxiety scores showed that participants in the read only study condition felt significantly more confident and prepared prior to testing. It is hypothesized that this confidence is due to miscalibrated metacognitive skills, mainly, the inability to accurately predict skill level at test. In order to draw further conclusions of test anxiety additional anxiety measures are proposed.

'THE STEWARDESS': CHINESE AUTHOR WANG SHUO IN TRANSLATION

Canaan Morse ('07), East Asian Studies

Wang Shuo, the founder of a Chinese literary genre known as 'hooligan literature,' stands out as perhaps China's most visible author during the past twenty years. An extraordinarily prolific author of books and screenplays, he has singlehandedly made waves across political and popular culture in China and has redefined the Chinese concept of literature. Much of his work, particularly his literature, champions supposedly anti-intellectual, anti-artistic sentiments, and his protagonists tend to be anti-heroes from a distinct social group that was strongly alienated from society during and after the Cultural Revolution. I have spent the past two semesters researching Wang Shuo and translating his novella 'The Stewardess,' a 55-page short story published in 1984, which was his first true literary success. Having described already Wang Shuo's contemporary image as well as the nature of his literary persona and arguments, I use 'The Stewardess,' which has never been translated into English, as a referent in order to examine the early stages of Wang Shuo's literary development and thereby shed some light into the literary origins of what has become the 'Wang Shuo phenomenon.' I also bring my own translation methods under scrutiny, and here I pay particular attention to problems of translating theme, tone and colloquial language within Wang Shuo's highly unique prose.

THE EFFECTS OF REGULATORY FIT ON EGO DEPLETION

Charlotte Morse-Fortier ('08), Mollie Kimmel ('09) and Kristen-Marie Ortiz ('09), Psychology

This study examined the relation between regulatory focus and ego depletion. The social psychology theory of regulatory fit states that all people are either predominantly promotion focused or prevention focused. A promotion focus is concerned with advancement, growth, and accomplishment, whereas a prevention focus is concerned with security, safety, and responsibility. Ego depletion is the theory that each person only has a limited amount of self-control resources, and when the resources have been depleted, that person will have less capacity to exert self-control. By giving participants tasks that were framed in either a promotion or prevention focus, we manipulated regulatory fit and measured the performance differences on a last, unframed task to measure ego depletion. Among other results, it was found that promotion frame participants spent more time on the last task than did prevention frame participants.

INTEREST-FREE BANKING, PLUS INTEREST?: A STUDY OF ISLAMIC BANKING IN PAKISTAN

Jennifer Murphy ('07), Economics

Despite their professed commitment to interest-free banking, Islamic financial systems have been accused of allowing elements of interest into their operations. In order to explore this issue, this project examines the presence of interest in the supposedly interest-free Profit and Loss Sharing (PLS) accounts of scheduled banks in Pakistan. While a significant relationship is shown between interest rates and rates of return on PLS accounts, Granger causality tests provide mixed results. Despite this fact, it is concluded that interest is a determinant of PLS returns, but that the relationship is clouded by each system's opposing practices and objectives, particularly in the long term. While the presence of interest is against Islamic doctrine, its existence may provide the familiarity foreign investors require in order to fully commit to investing in Islamic markets.

ION-PAIRING AND MOLECULAR RECOGNITION

Cassandra Newell ('08), Chemistry

The ion-pairing between N-[2-(dimethylamino)ethyl]-N-methylguanidine hydroiodide (NDMG) and molecules with charged nitrogen-containing groups is the subject of research aiming to better understand the effects of ion-pairing, one of many important solute-solvent interactions that play a crucial role in determining the behavior of molecules in solution. Pressure perturbation calorimetry (PPC) is an important tool in determining the change in entropy that occurs during solvation by finding the coefficient of thermal expansion, α Molecules can be categorized as either "structure makers", which increase the order of the secondary solvation sphere and thus decrease the entropy of the system upon solvation, or "structure breakers", which decrease the order of the secondary solvation sphere and increase entropy upon solvation. In PPC, sudden changes in pressure are applied to the compound of interest in buffer, the resultant change in heat is recorded, and α is calculated. Structure makers are characterized by a decrease in constantly positive values of α as temperature increases, whereas structure breakers exhibit an increase in constantly negative values of α PPC requires that the partial molar volume of a solute be determined and the process must be reversible. PPC studies of NDMG in various solvents and at various pH levels have yielded some unexpected results. The compound is structure making at low and high pH. However, in acetate, phosphate, sulfate, and citrate buffers at pH 6.9 NDMG displays behavior that fits neither category, but rather suggests that the compound is forming ion-pairs with the buffer. HPLC and NMR studies in acetate have failed to support this theory. Future work will include studying NDMG in a wider variety of buffers to determine the true explanation for this data.

QUANTITATIVE PCR SUGGESTS PREFERENTIAL NUCLEAR DNA ALKYLATION BY EPICHLOROHYDRIN IN THE CHICKEN GENOME

Adam Newman ('07), Chemistry

CITIZENSHIP AND BOUNDARY SETTING IN MULTIETHNIC STATES: THE CASE OF REFUGEES IN MALAYSIA AND ECUADOR

Adriana Nordin Manan ('07), Anthropology

How does multiethnicity influence a state's response toward refugees? This question has guided me throughout my year long project on refugees in Malaysia and Ecuador. In Malaysia, refugees are not distinguished from illegal immigrants by law and are subject to deportation and whipping upon arrest. In Ecuador, 250 000 Colombian refugees struggle to eke out a living in an economically disempowered country with one of the most open policies toward refugees. In this project, I seek to explain the difference in state responses toward refugees in these countries from the perspective of social organization in multiethnic countries. The focus shall be on the state's discourse on ethnicity as part of a larger project of maintaining existing ethnic landscapes and expressing a graduated desirability of citizenship. Very much an endeavor in research and reflection, through this project I hope to understand the position of refugees in the global discourse of citizenship, place and national identity.

PURCHASE AND SET HER FREE: FAIR TRADE AS A VEHICLE FOR WOMEN'S EMPOWERMENT

Adriana Nordin Manan ('07), Women, Gender, Sexuality

Fair trade is often marketed by Alternative Trade Organizations (ATOs) as a vehicle for women's empowerment in the so-called majority world. By tracing the history of gender as a central aspect of global policy-making and the attention on women's issues in U.S society, I will analyze the role of socially conscious consumerism in the US as a way of projecting the ideal of empowerment onto women of the majority world, and whether this represents a new form of consumer citizenship that is more transnational in nature.

CHANGE THROUGH TRADITION IN THE WORK OF ZULU SOFOLA

Ajima Olaghere ('07), Theater and Dance

This paper highlights the struggle Nigerian playwright 'Zulu Sofola underwent to impart her message. She attempted to confront gender oppression through tradition without contradicting herself in her play, 'Wedlock of the Gods.' "Zulu Sofola wrote commentaries about social problems and the influence of Western culture. Her goal was to maintain a traditional framework in the face of encroaching Western perspectives. She advocated enacting change through tradition, irrespective of Western ideologies about change. Sofola focused on gender oppression as a social problem. She intended to address gender oppression rooted in tradition by teaching traditional

customs to her audience in order for audiences to make informed and progressive decisions about what to change within traditional practices. Thus, her traditionalist approach to change requires cognizance and recognition of tradition as an initial step. Sofola argued against the influences of Westernization that shift the focus of change from confronting customs through tradition to confronting customs through Western ideology.

PHOTOCHEMICAL PRODUCTION OF MICROMOLAR SUPEROXIDE STANDARDS IN AQUEOUS SOLUTION.

Ta-Chung Ong ('07), Chemistry

Superoxide (O2-) is a highly reactive and ubiquitous oxidant produced in natural waters by the photolysis of dissolved organic material and direct biological export by phytoplankton. An analytical challenge in making careful O2- measurements is preparing stable O2- standards for both field and laboratory use. McDowell et al. (1982) developed a convenient method for O2- production based on photolysis of acetone in oxygen saturated, alkaline, 2-propanol solutions. We have developed a detailed mechanism for this photochemical reaction in terms of radical intermediates (1-hydroxy ethyl radical and 2-hydroxy-2-propyl radical), solution pH, acetone concentration, alcohol concentration, and photon dose. This model provides improved quantification of O2- production and decay, resulting a simple and robust source of O2- for calibration of field instruments.

THE CONFLICT BETWEEN MONTANA AND WYOMING OVER COAL BED METHANE PRODUCTION IN THE POWDER RIVER BASIN

Isaac Opper ('10), Economics

Over the last 10 years, coal bed methane (CBM) production has become a significant contributor to Wyoming's economy. Much of the environmental damage that occurs because of CBM production, however, occurs in Montana. This study attempts to use theoretical models to determine what level of production is optimal for the CBM companies, the state of Wyoming, the state of Montana, and the region as a whole. It finds that although some CBM companies have taken the state of Montana to court for allegedly regulating Wyoming's economy by imposing water quality standards at its border, in fact, the optimal amount of development for the region is less then the optimal amount of development for Wyoming. Therefore, after a certain amount, an amount below the optimal amount of development for Wyoming, development in Wyoming hurts Montana more than it helps itself. In short, this is a case where external regulation is required to produce the most efficient allocation of resources for the region. This study also attempts to find a way in which Montana and Wyoming could negotiate to develop an agreement of how develop the resource in a way that is the most beneficial to both states and the region as a whole.

HOMESCHOOLING: IS IT BECOMING TRADITIONAL FORM OF EDUCATION?

Ira Panova ('07), Psychology

Recent statistics from the U.S. and Canada have shown that homeschooling has been rapidly growing in the past decade. Hence, educational psychologists have been increasingly concerned with the quality of this type of education. In the present paper I am interested in summarizing past research that has been done on this topic. The major issues of interest include socio-demographic factors of homeschooling families, parental reasons to choose homeschooling over public and private schools and the most important outcomes for homeschooled children.

A MEETING OF EAST AND WEST: CAN EASTERN-INFLUENCED THERAPIES BE USED AS A TREATMENT FOR MOOD DISORDERS?

Paula Pelavin ('07), Psychology

I have researched and written a paper that discusses the potential for eastern-influenced therapies which draw on meditation and mindfulness training. The premise is that if the brain is capable of altering its structure (neuralplasticity) in response to increased use or injury and if monks, who partake in meditative practices, are able to alter the structure or function of their brain, then meditation and similar practices must have some ability to induce neuralplasticity. In the paper, I describe different forms of neuralplasticity as well as various existing forms of therapy relating to mindfulness, both established and burgeoning, and relate the two through evidence of neuralplasticity in monks. Potential benefits of eastern-influenced therapies as well as some difficulties of their use are discussed.

TEST ANXIETY AND ITS CORRELATION WITH POOR EXAMINATION PERFORMANCE

Monica Phillips ('07), Psychology

Anxiety is a common response to stressful situations (National Institute of Mental Health, 2006).

Anxiety can manifest on psychological as well as physiological levels. Animals have been used in several stress inducing situations to study the physiological responses that occur due to stress. More recently human's physiological responses have been recorded. The response of animals and humans to stressful situations is very similar. This reaffirms the fact that animals such as rats and mice are good models for human physiological responses. An anxiety provoking situation that often occurs for humans is exams. People are faced with exams and tests at several points throughout their lives. They are used to evaluate things such as general knowledge, academic achievement, or personality. They have weight on future endeavors such as jobs, graduate schools, and medical schools. Due to the high amount of importance placed on examinations many people experience anxiety surrounding them. This anxiety is widespread occurring across many different nations. Due to the widespread effect of test anxiety attention should be paid to how the physiological and psychological aspects affects people's cognitive abilities during the examination period. Finally, because it is so common and debilitating an effective treatment plan for test anxiety should be made. Specifically, because anxiety is such a physiological and psychological phenomenon treatment should be used to treat both levels.

FROM SEWAGE TO SYRINGES: THE HEALTH IMPACTS OF WASTE MANAGEMENT IN CENTRAL MAINE

Michael Piacentini ('07) and James Cryan ('07), Environmental Studies

This project explores the human health impacts of waste management practices in Central Maine. The project suggests that incineration and landfilling have significant human health impacts for Waterville area residents and explores ways in which the state of Maine is encouraging greater recycling and waste reduction strategies.

THE LANGUAGE OF OIL COMPANIES, POLITICIANS AND ALASKA NATIVE GROUPS ON DRILLING FOR ALASKAN CRUDE OIL AND NATURAL GASES IN THE ARCTIC NATIONAL WILDLIFE REFUGE

Weather Potdevin ('07), Anthropology

The United States reliance on oil as an energy source is apparent in the world we live in today. From this dependence, we are constantly on the lookout for new sources of oil, preferably a nearby source we can control and not have to worry about accessibility or supply. Then came the Arctic National Wildlife Refuge (ANWR), and it seemed all our dreams were answered, except for the fact that is was protected. Now there are two sides arguing: the oil companies and the Alaska Native groups, and one side trying to decide where to go: the politicians. Therefore, the question I explored was how do oil companies, such as Conoco Phillips, Atlantic Richfield Company (ARCO), ExxonMobile and British Petroleum (BP), with interests in Alaskan crude oil and natural gases use language to justify and support the drilling of the Alaska Native Wildlife Refuge (ANWR) compared to how most Alaska Native groups use language against drilling and Alaska state politicians use language to support either of the groups? Using the three different views mentioned above, I will look into how each uses language to support their beliefs, to challenge the other groups and to make their case to the public.

'GOOD AND EVIL, THE DEVIL AND STALIN IN BULGAKOV'S MASTER AND MARGARITA'

Benjamin Poulos ('08), German/Russian

This will be part of the Russian Student Symposium.

THE IMPACT OF POST EVENT INFORMATION ON EYEWITNESSES

Katherine Price ('07), Psychology

Despite one's best effort to report the correct details of a crime, it is likely that some facts may be altered or forgotten between the time of viewing the crime and testifying. Regardless of this information, eyewitnesses are still used as a dependable source in courts today although it has been found that eyewitness testimony is not always accurate (Rattner, 1988). Rattner (1988) reviewed more than 200 cases where a defendant was wrongly convicted; 52% of these cases relied on eyewitness identification. It is clear that something needs to be done to modify the system. Since the 1970s and onwards, researchers have been explored the effect that post-event information (PEI) has on eyewitnesses (Loftus, 1979b; McCloskey& Zaragoza, 1985; Lindsay, 1993). It is important to note that some of the PEI that eyewitnesses encounter may be false. Exposure to misleading PEI has been proven to cause impairment in memory—this phenomenon has been labeled the misinformation effect (Loftus, Donders, & Hoffman, 1989). This paper examines the various misinformation paradigms and theories about misinformation acceptance in order to provide direction for future researchers who are looking to modify the ways in which eyewitnesses are utilized in criminal cases.

WHY IS FEMINISM A BAD WORD?

Katherine Price ('07), Women, Gender, Sexuality

�I think if someone had asked me whether I was a feminist before the age of seventeen, I would have been unsure. I certainly did not regard myself as inferior to men, yet I suppose the usual clich� of �I�m not a feminist but�� applied to me� (Hobsbawm & Macpherson, 1989, p. 135). This statement reflects a common sentiment towards feminism. Often, feminist ideals are shared by many, yet the title itself is denied. What is it about the word �feminism� that elicits negative reactions? Is it due to the media�s portrayal of feminists (Terkildsen & Schnell, 1997) or is it due to the fact that some believe feminism is no longer �necessary� because men and women are equal (Nelson, Shanahan, & Olivetti, 1997)? I believe it may be due to the simple fact that most do not understand what feminism entails. This project focuses on examining the ways in which feminism has changed over the years and why young women and men are likely to agree with feminist ideals while denying the title itself.

SMALL MAMMAL ASSEMBLAGES UNDER URBAN INFLUENCE IN CENTRAL MAINE

Katherine Renwick ('07), Rosalind Becker ('08), Genevieve Dubuque ('07), Alexandra Sadanowicz ('08) and Claire Thompson ('08), Biology

During fall 2006, we sampled small mammal populations using Sherman live traps at three sites in central Maine. Our goal was to examine the variation in small mammal assemblages in habitats with different levels of disturbance (e.g., airport meadow, highly disturbed early-successional forest, and mowed field bordered by late-successional mixed forest). Our results indicate that the highest diversity occurred along the edge of the late-successional forest. Peromyscus spp. dominated the early-successional forest and late-successional forest edge sites, but meadow voles (Microtus pennsylvanicus) were most common in the airport meadow. Because Peromyscus leucopus and P. maniculatus are difficult to distinguish in the field, we are currently analyzing saliva samples in an effort to find a more accurate method of identification. Salivary amylase electrophoresis has proven a useful technique for correctly differentiating between the two Peromyscus species. Preliminary results indicate a 73% correspondence between field and laboratory identification, further supporting the need to employ molecular as well as field techniques in ecological experiments. The results of this research will help elucidate the effects of habitat disturbance on the distribution and abundance of small mammals, which play an important role in forest ecosystems as seed dispersers, prey to larger carnivores, and vectors of disease. Small mammal diversity may also serve as an indicator of overall ecosystem health, and thus provide information about the effects of development on Maine�s natural communities.

THE INFLUENCE OF GENDER AND FACIAL APPEARANCE ON VOTING PRACTICES

Amy Reynolds ('09), Kelsey O'Brien ('09) and Hanna Schenk ('09), Psychology

This study was designed to examine the effect of facial characteristics, specifically facial maturity and gender, on voting outcomes. Visual images of 24 political candidates, half women and half men, were paired with neutral party platforms. Participants were asked to examine either all the female or male candidates and determine how likely they would be to vote for each one on a one to seven scale. After finishing, they were asked to indicate how attractive and competent each candidate was, also on a seven point scale. This study replicated the findings that mature faces were rated as more competent than immature faces, regardless of their gender. No significant effects were found for facial maturity on voting likeliness or attractiveness. This could be interpreted as promising for female political candidates.

FROM THE FAIR TO THE LABORATORY: AGRICULTURAL SCIENCE AND EDUCATION IN AROOSTOOK, MAINE.

Thomas Reznick ('07), Science, Technology, and Society

In the late 19th century agricultural education became an institutional endeavor. This was in part the result of the growth of agricultural science as a professional discipline. However, much of the credit for this transition is due to the rise of the Grange, which supplanted the existing system of agricultural science and education comprised by the local farmer's club and county fair. Institutions such as the Experiment Station, the Extension Service, and the College of Agriculture disseminated information in a top down fashion, from the laboratory down to the farmers, as opposed to farmers clubs and fair participants performing agricultural science at the local level.

WORLD BANK -- CPA CONFLICT: THE STRUGGLE TO DEFINE HUMAN RIGHTS AND DEVELOPMENT IN THE PHILIPPINES

Adam Robbins ('07), Anthropology

This thesis focuses on the conflicts and interactions between Cordillera Peoples Alliance (CPA) and

the World Bank (the Bank) in the Philippines. The CPA is an advocacy organization active in the Cordillera region of Luzon, and the Bank is one of the world's leading financial and development institutions. Beginning under the Marcos regime in 1980's, the Bank became involved in infrastructure, resources extraction, and other economic development projects in the Cordillera. The CPA has been a primary opponent to these projects. Programmatically and symbolically, these two organizations have struggled to control development policy in the Cordillera region. This project documents that struggle through tracing their policy implementation and discursive interactions. Tracing the conflicts and cultural misunderstandings that arise between multilateral organizations such as the Bank and the CPA can lead to more effective understandings of economic and social development.

SYNTHESIS OF CAGED AND PARA-LINKED OXACALIXARENES

Douglas Rooke ('08), Chemistry

The Katz Group has been working on the synthesis of para-linked oxacalix[4]arenes along with bicyclooxacalixarenes by means of nucleophilic aromatic substitution (SnAr). Reactions involving meta-hydroxyl arene heterocycles and chlorinated azaheterocylic compounds such as functionalized pyrimidines and pyrazines have shown promising yields above 70 percent. Both types of macrocycle have shown that they are very crystalline and were able to undergo X-ray crystallography experiments using Colby's single crystal X-ray crystallography machine. These macrocycles have promise in molecular binding, polymer, and supramolecular chemistry.

MUSEO DE LA MEMORIA: AN EXPLORATION THROUGH MEMORY OF ESMA

Cornelia Sage ('07), History

From 1976 to 1983 a military dictatorship governed Argentina. The dictatorship outwardly conducted a war against the Argentine population in an attempt to rid Argentina of subversive ideologies, specifically socialism and communism, which challenged their conservative political power. To conduct the war, the military established roughly 350 clandestine prisons throughout the country where Argentines were taken, questioned, detained against their will, tortured, and in most cases killed. This project takes a deeper look into the functioning of the largest, most extensive prison in the city of Buenos Aires, La Escuela Mecanica de la Armada (ESMA). Through the use of personal testimonies, the project examines the victims' loss of identity through their abduction, torture, and captivity. The military believed that it was capable of 're-shaping' the victims' identities and their political alliances. Through a rehabilitation program, the military attempted to convert a small number of victims into supporters of the regime. The victims' participation in the program guaranteed their liberation, but in most cases it failed to transform the victims' political views. After three women were released in 1979 they testified against the Argentine dictatorship and the violation of human rights, which marked the beginning of the regime's decline. The failure of the program demonstrated the dictatorship's limitation of power, and its inability to successfully 're-define' an individual's identity.

HUMAN HEALTH EFFECTS OF HOUSEHOLD FURNISHINGS AND ELECTRONICS

Megan Saunders ('09) and Aaron Olcerst ('07), Environmental Studies

A community environmental health assessment for chemicals contained in household furnishings and electronics. A study into the possible exposures to chemicals and the possible human health effects. Chemicals specifically focused on are brominated flame retardants, perfluorinated compounds, mercury, and arsenic.

BRAIN-ACTIVATION COMPARISON IN MUSICIANS VS. NON-MUSICIANS

Alexander Shafer ('07), Psychology

Music has always been an inherent part of human society. While music may have a profound effect on those who listen to it, it has an even greater effect on those who create it. This review explores some of the research that has gone into understanding exactly what these effects are via a comparison of musicians vs. non-musicians. Notable findings are the physically enhanced brain areas responsible for temporal information processing and pitch processing that occurs while performing music. It is clear that the proficiency with which a musician can perform plays a large role in the development of these enhanced brain structures. It is also important to take into account the type of musician, when considering which areas of their brain will be affected. These effects are not limited to instrumentalists, for during musical tasks, singers also have brain activations that would not occur in someone with no prior musical training. While a fair amount of research has gone into studying these effects that already exist, very little has been done to determine how these effects came about in the first place. Studies have been designed and are currently underway to hopefully discover new findings about the origination of musical talent in the minds of today's children.

SEEKING MODERNITY: THE GROWTH OF SHOPPING CENTERS IN THE CITY CENTER OF KATHMANDU, NEPAL

Jui Shrestha ('07), Sociology

Non-residential construction for the last fifteen years in the city centre of Kathmandu, Nepal has been predominantly that of shopping centers. These are complexes with 60-100 stores devoted mostly to selling clothing and accessories. The exponential growth of shopping centers is surprising in light of political and social turbulence over the last thirteen years and the homogeneity of the products sold in the centers. I found out that a lack of legislation and the ease of receiving credit for construction have enabled this growth. Internal migration of rich landowners from the southern parts of the country and a surge in migrant workers from overseas sending money home has also contributed to the demand for shopping centers. A non-risk taking business culture has also continued this growth. Historically, the city centre has been a residential and commercial area and shopping centers push the area's growth to a new direction. As each new center becomes grander and extend the limits of the centre combined with the social structure of the area, shopping centers can have an impact on the nature of historic preservation and physical expansion of the core.

TRANSCRIPTIONAL REGULATION OF D-PAX2 IN DROSOPHILA EXTERNAL SENSORY ORGANS.

Sarah Smiley ('07), Biology

D-Pax2 is a Drosophila differentiation factor expressed in specific cell types in both the developing eyes and bristles. Its expression in these two sensory systems is controlled by two discrete enhancers, one in the fourth intron that regulates the gene in the eye and one upstream of the transcription start site that regulates it in the bristle. Although the enhancer that drives D-Pax2 expression in the eye has been well studied, there is little known about the mechanisms that control its expression in the bristle lineage. In order to investigate how D-Pax2 is regulated during bristle development, we have identified three mutants (sv6, sv7 and sv8) which we believe are defective in D-Pax2 transcription. To identify potential regulatory mutations, we have sequenced the 4 KB directly upstream of the transcription start site in each mutant and compared it to the wild-type sequence. No mutations were discovered. Examining this upstream sequence, we have identified a short stretch approximately 1.4 KB from the transcription start site that is a potential binding site for the transcriptional activator Senseless. Misexpression of the senseless gene using the UAS-GAL4 system leads to coincident expression of D-Pax2 and ectopic bristles. To demonstrate direct regulation of D-Pax2 by Senseless, we are currently generating a Senseless-MBP fusion protein and will use it to perform electrophoretic mobility shift assays using the putative Senseless binding site.

CONCEPTIONS OF WILDERNESS THROUGH GIS

Sarah Stevens ('09), Environmental Studies

CONCEPTIONS OF WILDERNESS THROUGH GIS Connotations of wilderness are not tied to the word itself, but rather to our perceptions of what it means to be wild. This study considers how conceptions of wilderness in American society translate into land conservation. Since the founding of the country, Americans have created a wilderness ethic that makes a clear distinction between unsettled wild land and civilization. Statutory Wilderness, as defined by the 1964 Wilderness Preservation Act, is land that is uninhabited and largely unchanged by human processes. However, most of the land in the Northeast has been altered, often significantly, by humans. To address the question of land conservation in the Northeast, GIS was used to visualize different ways of conceptualizing wilderness in Maine. These maps include regions which are currently preserved with various levels of protection and areas such as timberlands which may have wild attributes. Although it is not federally designated, there is a significant portion of land in Maine that could be considered wilderness.

OBSTACLES AND STEPPING STONES TO THE HERO'S PEDESTAL: REUNIFIED GERMANY'S SELECTIVE COMMEMORATION OF RESISTERS TO NATIONAL SOCIALISM

Suzanne Swartz ('07), History

In Nazi Germany, thousands of brave individuals risked their lives to actively resist the Nazis. They distributed fliers denouncing the regime, aided in the protection and escape of Jews, and even tried to blow up Adolf Hitler. After the Second World War ended, Germans initially saw the resisters as traitors. When Germany divided into two separate countries in 1949, memory of resistance divided with it: resistance became a positive tool to legitimize the governments of each country. The communist East used left-wing resistance to distance itself from the Nazi past and establish a myth of "anti-fascist" resistance. The West used resisters such as those involved in

the 1944 plot to kill Hitler to show that an "other Germany" existed, that not all Germans had been Nazis. After unification in 1990, those pre-established memories clashed, and West German memory began to dominate. Yet in the 1990s, a new sort of bias emerged in resistance commemoration. In addition to a relative continuation of the pre-unification divisions, other factors, such as current events, the desire to keep history alive, and politics all made commemoration more selective. Recognition of just one or two individuals within the most glorified groups, rather than recogniton of the group as a whole, became even more apparent. This project explains why biases in public memory of resistance continued after unification, biases which have become apparent in commemoration ceremonies, memorials and street signs, and even films. The thesis brings to attention the distortions in memory and the misconceptions that result from those distortions, as well as the tendency in historical memory to glorify a select few individuals and neglect others who may also merit a hero's recognition.

THE IMMUNOLOGICAL EFFECTS OF WRITTEN DISCLOSURE IN ATHLETES

Kristen Thatcher ('07), Psychology

Many research studies have demonstrated the health benefits of written disclosure of traumatic or stressful events. These benefits include fewer health clinic visits, shorter hospital stays after surgery, and increased immune function. In athletes, high immune function is necessary to ward off illness during training and competition, but much research has shown that athletes tend to have lowered immune function. Therefore, writing about traumatic events may be a way for athletes to remain healthy during their seasons. Participants were varsity athletes and people who exercised less than three hours per week. Saliva samples and reported health measures were taken before participants wrote in an online journal on four consecutive days. Saliva samples were taken again both one and three weeks after baseline, and reported health was measured again three weeks after baseline. The saliva samples will be analyzed for secretory IgA as a measure of immune function.

IT [DOESN'T] ALWAYS GOT TO BE BLOOD: ALTERNATIVE KINSHIP SYSTEMS AND AGENCY OF NAMING AND SELF-IDENTITY IN 'BUFFY THE VAMPIRE SLAYER'

Lindsay Tolle ('08), American Studies

In the 1950s, the television became a centerpiece of the American way. Everything from elections to wars were being re-defined by the presence of the TV. Nowadays, television shows are still a cornerstone of American family life, but the images being shown have not modernized to faithfully represent most Americans. Despite the increasing number of people who have grown up/are growing up in 'non-conventional' families, most shows still stick to the formula of one mom, one dad, 2.5 kids, and a Golden Retriever. This is not the case, however, in Joss Whedon's 'Buffy the Vampire Slayer.' Throughout the show's seven seasons, the writers portrayed the development of the 'Scooby Gang,' a self-made alternative kinship system that brought the characters more of the benefits we associate with 'family' than the family systems from which they orignated - both the nuclear family and the fedual system seen in the vampire world. But 'Buffy' goes beyond the message of validating alternative kinship systems; it illustrates how its characters - notably Spike, Xander Harris, and Buffy Summers herself - achieve their self-identity and the ability to 'name' themselves through the love, understanding, and support their fellow Scoobies provide.

THE CRIMINALIZATION OF SEXUAL VIOLENCE AND WARTIME RAPE UNDER INTERNATIONAL HUMANITARIAN LAW

Katelyn Trionfetti ('07), International Studies

In short, my presentation would be on my honors thesis for International Studies, which is on how crimes of sexual violence have been dealt with by international humanitarian law or the laws of war. The central question of my paper is why sexual violence was addressed by the ad hoc criminal tribunals for the former Yugoslavia (ICTY) and for Rwanda (ICTR) set up by the United Nations in the mid-1990s and why it was not addressed in the Nuremburg and Tokyo Tribunals that followed World War II. I am examing how the growth of and emergence of a powerful feminist movement both within and fostered by the United Nations impacted the weight given to wartime sexual violence in the 1990s and through present day. I trace the history of the feminist movement within the United Nations and then show how central elements of this movement reproduce themselves in the statutes, indictments, judgments, and appeals chamber decisions of both tribunals to help to highlight the strides that have been made in this arena. In addition my two semesters of work on this project, I recieved a grant from the Hunt Fund to go visit one of the tribunals (ICTY) in The Hague over January. During this visit I was able to observe trials, interview trail attorneys that had worked on some of the cases I examined, and granted permission by the United Nations I was even given library access to continue with my research. There was no space to write this above, but I just wanted to say that I would be happy to give either a 15 or 25 minute presentation and feel free to give me either slot. If you are looking to fill time I can do 25 and if there are more

particpants than expected I certainly do not mind doing the 15 minute one. Also, I have a class conflict Thurs 2:30-3:45 and a volunteer program Friday 2-5.

VOICES OF THE POOR: POVERTY AND GROWTH IN ALBANIA

Magda Tsaneva ('07), Economics

This paper uses three waves of panel surveys at the household level to study growth and poverty in Albania over the period 2002-2004. It attempts to answer two main questions. The first question is directed at finding the micro determinants of growth and aims to expose the obstacles households face to improve their economic situation. The main focus of the analysis is to investigate the importance of health, education, and infrastructure indicators for income growth. The second question asks whether growth in Albania during the period 2002-2004 has been pro-poor. I find that there is some evidence for a convergence of incomes and a pro-poor growth, which has led to a substantial decrease in the number of people living under the poverty line. I also find that infrastructure has not been an important determinant for income mobility, and neither has health. Only the higher education of poor urban households seems to have affected prospects for growing out of poverty, and unexpectedly, the relationship is negative.

CHARACTERIZATION OF AFN1, A GENE ASSOCIATED WITH CEREAL GRAIN GERMINATION

Tenzin Tsewang ('07), Biology

The AFN1 gene is transiently expressed in germinating oat grains. As AFN1 is not expressed in dormant oat grains during imbibition, we hypothesize that AFN1 may be involved in stimulating the germination process. Sequence analysis of an AFN1 cDNA clone indicates that the AFN1 polypeptide is similar to a previously identified abscisic acid (ABA) glucosyl transferase. This suggests that AFN1 may be acting to glucosylate ABA, thereby inactivating it. As the hormone ABA is known to inhibit germination, ABA glucosylation/inactivation could lead to germination in grains expressing AFN1. To test this hypothesis, we have constructed an expression plasmid that encodes an MBP::AFN1 (maltose binding protein) fusion protein. E. coli cells carrying the expression plasmid were found to produce the MBP::AFN1 fusion protein as a substantial fraction of total protein. We are currently in the process of purifying the MBP::AFN1 fusion protein by affinity chromatography, so that it can be assayed for ABA glucosyl transferase activity. We also wish to test the effect of AFN1 gene expression during grain imbibition on the germination behavior of the grains. To this end, we have constructed plasmids for the overexpression and RNAi-based suppression of AFN1 in transgenic plants. These plasmids have been introduced into oat cells by particle bombardment and we are in the process of regenerating transgenic plants for study.

ANIMATION OF HUMANS' PERCEPTION OF SELF MOTION

Brianna Tufts ('07), Mathematics

As humans move through their daily activities they are aware of their positions and movements in space due to information generated by the vestibular system of the brain and the inner ear. The messages generated by the system signal to humans when they are tilted to the side, spinning in a circle, moving backward, etc. The function of the vestibular system is to keep humans properly informed as to their orientation and movement in space. Yet, there are times when what a human perceives as her motion is different from her actual motion. For example, after a person spins around 20 times and then tries to stand still, she will most likely still feel as if she is still spinning when in reality she is standing still. Otolaryngologists work with patients who repeatedly perceive motions contrary to their actual motions. In order to improve communication between doctors and patients, movies are made to demonstrate a particular movement, such as moving in a circle or pulling out of a driveway. These movies will make it easier for patients to describe their perceived motion and for doctors to properly understand the feeling and address the problem.

MARRIAGE AS REPRESENTED THROUGH THE LENS OF REALITY TELEVISION

Amanda Vickerson ('07), Women, Gender, Sexuality

American television today seems to be inundated with shows dedicated to marriage and weddings. Likewise, bridal magazines and websites abound, and much scholarly research has tried to figure out why we seem to be obsessed with weddings. Television is an extremely pervasive medium since it is widely available to most Americans. Since marriage rates are actually decreasing in America, I would like to discover if television shows about marriages and weddings are really a backlash against this decline. There is something greater going on in our country, since marriages are less common, but media coverage on marriages is larger. It is a tricky thing to examine, because marriage/wedding shows are much about fantasy and the American Dream of getting married. With shows like A Wedding Story, we can all take part in the fantasy of getting hitched. But why? Why do we need to see other people getting married so that we can pretend that we,

too, will have a glorious wedding someday? Why, when the institute of marriage has been shown to be deeply flawed and quite unequal, are we still tuning in to watch Engaged & Underage and The Newlyweds? The fantasy shows that we watch and the glossy magazines we read seem to cover up the fact that the institution of marriage has problems. I want to find out why we are obsessed with getting married, even though many of us won't actually carry through with the event or will end our marriages in divorce. Is it just the pageantry? The attention one receives as a bride and a new wife? To me, the huge attention paid to marriage in the media these days brings out the flaws within the system. When our society becomes obsessed with something, there's a good chance that we're trying to hide something else. What are we hiding?

THE INFLUENCE OF SOCIAL CONTEXTS ON GENDER EXPRESSION

Caroline Voyles ('08), Christina Evriviades ('08) and Megan Smith ('09), Psychology

This study explores the emotional flexibility of androgynous people confronted with a social situation primed to elicit masculine or feminine emotional behavior. College students viewed a funny film clip in the presence of another person, believing that following the film clip, they would either be competing or cooperating on a task with that participant. It was hypothesized that when androgynous people are primed to cooperate in a task, they will display more feminine gender characteristics. This includes an increase in reported positive affect and increase in smiling. Conversely, when primed to compete, androgynous people will elicit more masculine emotions. This includes a decrease in reported positive affect and a decrease in smiling. We expected this emotional flexibility to occur regardless of biological sex. Androgyny was established using the Bem Sex Role Inventory. The results of this study will have implications for further research involving gender and emotional expression.

CONSTRAINED HAMILTONIAN ANALYSIS OF VECTOR THEORIES WITH SPONTANEOUS LORENTZ VIOLATION

Arturs Vrublevskis ('07), Physics and Astronomy

A Hamiltonian constraint analysis is performed on a class of field theories in which Lorentz symmetry is spontaneously broken by a vector field. Such symmetry breaking is of interest because it may occur in the context of quantum theories of gravity. For a class of such models, the vector field emerges with properties similar to the photon. The Hamiltonian constraint analysis is used to compare this class of vector theories to conventional electrodynamics.

PERCEIVED SELF-MOTION DURING ACCELERATION AND DECELERATION IN A CENTRIFUGE

Arturs Vrublevskis ('07), Mathematics

A person's actual motion does not always correspond to his or her perceived motion. Differences between the two can have serious consequences and are important in aviation safety and treatment of vestibular disorders. The study reviews basic principles of motion perception and introduces a model that predicts the perceived motion based on the actual motion and the initial state of subject's vestibular system. This model is applied to data from an experiment where subjects underwent acceleration followed by deceleration in a centrifuge while their perceived roll angle was measured. We used the model to extract quantitative information about time constants characterizing decays in motion perception in human vestibular system. The model accurately accounts for experimentally observed differences in the perceived roll angle during acceleration and deceleration. In addition, an improved model, which explains the differences in roll perception between subject facing the direction of motion and subject facing the opposite direction, is presented.

'A LITTLE CHILD SHALL LEAD THEM': EDUCATION AND CULTURAL IDENTITY DESTRUCTION IN THE GREAT 'CIVILIZING' OF INDIAN COUNTRY

Anne Wachtel ('07), Education and Human Development

Over the years since first contact, federal Indian policy has sought to incorporate Native Americans into the dominant white picture as understood by the federal government in specific ways and according to specific and predominately ethnocentric ideologies surrounding concepts of civilization, progress, and cultural superiority. With the education of Native American youths identified as a principal means of quick and effective cultural transformation and assimilation, federal policy directly affected the school environments in which Indian children were taught, dictating the content, methods, practices, and most importantly the goals of Indian education—paramount among these civilization and assimilation in the contemporary social, economic, and political realties of the dominant white society. The history of Indian education efforts and the legacy they have left have important implications for the contemporary discourse

on education in the era of modern prescriptive education policy like "No Child Left Behind". Furthermore, a closer examination of the cultural identity destruction reigned down on students at federal Indian boarding schools illustrates the importance of community-based, culturally inclusive, and bilingual education in the creation of healthy and positive development outcomes for children in schools, all of which are severely compromised by contemporary policy's emphasis on quantitative results. Now more than ever, this important, and often-overlooked, chapter in the history of American schools deserves a critical and honest examination. As such, this project endeavors to provide an examination of the overall goals of federal Indian policy from 1776 to present day as they related to the education of Native Americans and the legacy that such an education has left.

SIZE DISTRIBUTION, GROWTH RATE, AND CONDITION FACTOR OF NEGAPRION BREVIROSTRIS IN COASTAL HABITATS OF SOUTH CAICOS, BRITISH WEST INDIES

Kyla Wagman ('07), Biology

Negaprion brevirostris, lemon sharks, are apex predators and habitat stabilizers abundant in the waters around the Turks and Caicos Islands (TCI). Because of their importance within marine environments, it is essential to ensure their sustainability. In order to do so, particular attention must be placed upon the juvenile stocks. Lemon sharks are a slow growing species and thus vulnerable to predation when they are younger. So during this critical period, juveniles exploit coastal nursery habitats that offer vital resources and protection. This study aimed to determine spatial and temporal size dynamics and growth dynamics of lemon sharks found in waters around South Caicos, TCI. Lemon sharks were caught both passively with two 50m long gill nets, and actively with a seine net. Time of capture, size, weight, sex, and health data were recorded. Throughout a one-year study, 96 lemon sharks, including recaptures, were caught. Mean total length was 87.8 ± 16.1 cm and mean weight was 3.27 ± 1.65 kg. Captured lemon sharks were most abundant in the 80-89 cm size class. Using pre-determined Von Bertalanffy growth function variables, the mean age of captured female sharks was 1.90 ± 1.16 years and mean age of male sharks was 1.93 ± .68 years. Daily growth rates and condition factors of recaptured individuals were determined from precaudal lengths. The lemon sharks display a degree of site selection and their seasonal size distribution reflected the biological birthing adaptations. Ages of sharks suggest juveniles remain in the coastal habitats for longer periods of time than expected.

QUANTITATIVE PCR METHODS FOR ASSESSING EPICHLOROHYDRIN DAMAGE WITHIN CHICKEN ERYTHROID CELLS

Megan Watts ('08), Chemistry

Epichlorohydrin (ECH), common in the synthetic polymer industry, is a bifunctional alkylating agent that undergoes reaction with DNA. To assess whether DNA structure affects ECH reactivity in vivo, we are developing quantitative PCR techniques to monitor damage at different loci of 6C2 chicken erythroid cells. We are targeting mitochondrial DNA and distinct regions of nuclear DNA near the beta-globin domain that differ in their degree of packaging. Because the folate receptor gene is expressed in 6C2 cells, we are designing primer sets to amplify within this locus to assess ECH targeting of 'open' chromatin. Targeting of this locus will be compared to that of a highly condensed, unexpressed region to the 3' end of the beta-globin gene. Micrococcal nuclease digestion will be used to verify DNA accessibility at these sites. Our ultimate goal is to provide insight into the DNA damage arising from ECH exposure.

DON'T TAKE MY BREATH AWAY: THE HUMAN HEALTH IMPACTS OF RADON IN MAINE

Ryan Weaver ('07) and Casey Lyons ('07), Environmental Studies

The average American spends approximately 90% of their time indoors. Indoor environments can be polluted 3 to 5 times more than outdoor environments. There are a variety of indoor air pollutants that may pose significant health risks. This project focuses on characterizing the human health impact of residential radon exposure. Radon is a form of ionizing radiation, a known human carcinogen and is the second leading cause of lung cancer in the United States. This is an important issue for Maine because approximately 1/3 of all Maine homes have radon levels exceeding 4pCi/L (EPA's recommended clean-up level). Although radon poses a serious health threat to Maine, testing and mitigation is fairly inexpensive and easy. This project strives to increase awareness of radon and its health implications and to provide information on testing and mitigation measures.

THE HILL & THE 'VILLE

Ryan Weaver ('07) and Kate Nevius ('07), Education and Human Development

The overarching goal of this project was to assess the connections between Colby College and the Waterville community by examining: how Colby students perceive Waterville and its residents, how

Waterville residents perceive Colby and its undergraduates, and how Colby faculty and staff, who often have ties to both Colby and Waterville, perceive these two groups. Through interviews with forty individuals from each of these three groups, a snapshot of perceptions was generated to identify the areas which, through focused efforts, would best strengthen the existing relationships between Colby and Waterville. Accordingly, through this research suggestions and recommendations were generated.

ROCK DETECTIVE'S INTRODUCTION TO WHALE EAR BONE FOSSILS FOR GRADES K-12

Janet Weidner ('07), Geology

Rock Detective is a hands on, interactive, and investigative program that supplements the basic science-classroom curriculum. It is used nationally and internationally to introduce many of the fundamental concepts of Earth science to K-12 students, and the program includes the critical components of the National Science Education Standards. Rock Detective is a series of mysteries that poses questions about given hand specimens and is based on the pedagogy that students who are curious about what they are learning will remember what they discovered. The mysteries are carefully structured to capture student interest, with the goal that even difficult concepts become easy to understand and fun to learn. Mysteries centered on fossilized whale-ear bones were developed this past fall. The finished products are designed appropriately for grades 5-8, and 9-12. Each mystery focuses on various concepts associated with the hand specimen, such as living cetacean biology and behavior, sound travel and frequency through water, and significance of fossil size. Ultimately, each mystery is also an introduction to overarching geologic concepts such as the scope of geologic time, ongoing scientific debate, and the basics of paleontology. Each student that investigates the whale-ear bone will experience something different because of individual personal interests and approaches taken towards understanding the mystery. After learning about whale-ear bones, students will have a strong grasp on how sound travels through water, and what types of clues paleontologists use to learn about extinct animals. In addition to qualitative observations, students will be assessed quantitatively through an administered pre-test and post test, with results used to determine the efficacy of each module.

MUSIC AS PLACE: WHAT HAPPENS WHEN WE COMBINE GIS AND MUSIC SYMBOLOGY?

Kerry Whittaker ('08), Environmental Studies

GIS, or geographic information systems, is a computer cartography program that provides a useful means of representing and analyzing space. It is used most often today in the environmental field to overlay layered components of location towards a visualization of their interaction. When thinking about layers, music comes to mind in its infinite dimensions. One might think about music on the level of production, instrumentation, rhythm, chord skeleton, note-to-note interactions, pitch velocity, volume, tempo, performer-audience interaction, etc. Each layer links itself to another through time and space. GIS provides a unique means of representing the interaction of music's layers by capturing them in a geographic location. This project takes a jazz tune, "Round Midnight," by Thelonius Monk and Cootie Williams, and maps it through New York City, one of the first places it was performed in the 1950's. The map shows that, by mathematically defining the tune in terms of geographic location, one might represent a song as a single image, no longer linear. Through this project, the melody weaves its way through New York City as a series of overlapping pathways. Beneath the pathway lie the chord changes. This provides an effective visualization of "chords" as existing implicitly. Even through rests in the music, the overall chord exists. Rhythm is represented by both length of melody line and size of "chord circle." Using the layering capabilities of GIS, one could further this project by overlapping additional elements of the tune as linked by time in space.

AN ANALYSIS OF THE EFFECTIVENESS AND IMPACTS OF CHILD CAP PROVISIONS IN WELFARE REFORM

Aimee Williams ('07), Economics

This study uses 1995 and 2000 data from the Indiana Welfare Reform Evaluation Project to investigate the effectiveness of a child cap, a provision that prevents families on welfare from receiving additional benefits for children conceived while the mother was receiving welfare. The project uses multiple regression analysis to attempt to determine whether the provision has the intended effect, and what unintended consequences it has on child wellbeing. We find that while individual characteristics were important in predicting fertility and use of birth control or practice of abstinence, the child cap provision does not have a significant impact on these study variables. From the data available, however, the provision seems to have few negative effects on children.

A POLLEN CHASE EXPERIMENT; EXAMINING VARYING LEVELS OF EMBRYONIC INBREEDING DEPRESSION

Emily Wilson ('08), Biology

Breakdown of self-incompatibility (SI) has been found in several families of plants, including Solanaceae. A pollen chase experiment was performed upon three Costa Rican populations of Witheringia solanacea to examine the breakdown of genetically enforced SI and the extent of embryonic inbreeding depression. Self-pollen was applied in the bud, with outcross pollen applied one day later, with outcross pollinations at both intervals as a control. A variety of responses were found among the populations. The small population, BOHS, readily accepted self pollen and suffered from very low inbreeding depression. The two large populations from Monteverde and Las Cruces both have lower fruit set with self-pollination precedence, indicating that bud pollinations can overcome the self-incompatibility response and that embryonic death due to inbreeding depression causes fruit failure. The treatment:control fruit set is higher for the Las Cruces plants, showing that they have a stronger SI response, which is also supported by pollen tube and RNase data. Self-precedence seeds from the Las Cruces plants are likely to be outcrossed due to a combination of stronger SI and severe embryonic inbreeding depression causing no selfed seeds to survive, while self-precedence seeds from Monteverde are likely selfed, due to weaker SI. Genotyping surviving progeny will reveal whether the self pollen precedence does, as predicted, result in the survival of more selfed seeds for Monteverde than for Las Cruces.

GOOD AND/OR EVIL: OSOFISAN AND HIS ESU AND THE VAGABOND MINSTRELS

Roy Wilson ('07), Theater and Dance

In this project I present an analysis of the reader-response frame Femi Osofisan constructs in his play Esu and the Vagabond Minstrels. In the conventional sense, Osofisan writes didactically, with a sense of moral instruction. But in an unconventional sense, Osofisan's unique development of form allows for a participatory mode of didacticism, thereby encouraging the audience to derive its own fundamental conclusions about what it means to be moral. Primarily, this project is an exegesis of Osofisan's use of the mise en abyme (i.e. the play within a play) device and how it functions throughout the play; and using the framework of the American gothic, I also comment on the hypocrisies of morality and Osofisan's attempt to counter people's tendency to exhort principles they themselves do not practice.

TEMPERATURE CONTROL IN ULTRA COLD PLASMAS

Roy Wilson ('07), Physics and Astronomy

This presentation will discuss our progress towards achieving external control of the electron temperature and the Coulomb coupling parameter of ultra-cold plasmas. Using a Littman dye laser, we create the plasma by partially photoionizing a dense, cold sample of rubidium atoms in a magneto-optical trap (MOT). At a controllable time delay, we excite neutral atoms in the plasma to a specific Rydberg state using a narrow bandwidth pulsed laser. We will measure the electron temperature as a function of delay between lasers, as a function of the Rydberg state populated by the second laser, and as a function of Rydberg atom density. We have made progress towards optimizing and quantifying the achievable Rydberg atom density by using mm-wave spectroscopy to control the evolution of a cold dense Rydberg sample to plasma. We have also begun preliminary investigations of plasma electron temperature measurements.

CHARACTERIZATION OF THE ANTIBIOTIC AND MERCURY RESISTANCE CAPABILITIES OF BACTERIAL STRAINS ISOLATED FROM SOILS OF AVERY PEAK, MAINE

Victoria Work ('08), Biology

High levels of mercury in aquatic flora and fauna have been well documented in the pristine ecosystems of the Northeast, and recently there has been mounting concern for mercury toxicity in terrestrial systems. Mercury is released into the atmosphere by Midwestern industrial emissions, and is transported eastward via the jetstream. It is deposited by precipitation and taken up by plants and microbes, thus cycling through the ecosystems. Bacteria isolated from the soil of Avery Peak in northwestern Maine exhibit strong resistance to both mercury and antimicrobials. A correlation between these two resistance capabilities, facilitated by horizontal gene transfer, would result in an increase in bacterial antibiotic resistance with increasing mercury pollution. This research represents an ongoing study to characterize the molecular genetic aspects of mercury and antibiotic resistance in several isolates from the soils of Avery Peak. Twenty-eight bacterial strains were isolated and identified based on 16S rRNA gene sequencing. Assays for their resistance to organic and inorganic mercury, and natural and synthetic antimicrobials were performed, and three strains were recently chosen for closer study: a gram-negative Stenotrophomonas that exhibits virtually maximal antibiotic and mercury resistance, a gram-positive Micrococcus with strong resistance to mercury but only weakly resistant to antibiotics, and a gram-positive Kocuria with low resistance capabilities. All three have been shown to harbor a segment containing the genes merB and merD of the mer operon, a mechanism used by bacteria

to detoxify elemental mercury. Projected studies include the identification of antibiotic resistance gene clusters and further characterization of the horizontal gene transfer capabilities of the isolates.

TRANSFORMATION OF MERA GENES AND ANTIBIOTIC RESISTANCE AMONG GRAM-NEGATIVE BACTERIA

JaeHee Yun ('08), Biology

Mercury pollution has been a threat worldwide. Mercury exposure can be lethal to many organisms including bacteria, and some bacterial strains have evolved mercury reduction mechanisms. The enzyme responsible for mercury reduction is encoded by the merA gene, which is a part of the mer operon.. Many mercury resistant strains also have high antibiotic resistance. Hence, genes responsible for antibiotic resistance are closely linked to the mer operon. In some species, these genes are located on plasmids, and through transformation processes, bacteria can freely exchange these genes. Therefore, it is reasonable to argue that environmental mercury acts as a selection agent in bacteria with high mercury resistance as well as antibiotic resistance. The purpose of this study was to transform plasmids responsible for both antibiotic and mercury resistance genes among Gram-negative bacteria. Plasmid DNA from a mercury and antibiotic resistant Pseudomonas sp. was used to transform Gram-negative bacteria Acinetobacter salmonicida and Acinetobacter radioresistans. The plasmid fraction responsible for both antibiotic and mercury resistance was transferable and expressed in previously mercury and antibiotic susceptible bacteria

THEMES OF BELONGING AND INDENTITY IN 'DIASPORIC' INDIAN LITERATURE

Christopher Zajchowski ('07), Independent Studies

On January 25, 2007, *The Economists* ran an article discussing new constructions of belonging in Great Britain. According to *The Economist*'s study, "Englishness" was reportedly seen by many surveyed as an "ethnic, rather than a civic, identity." Across the pond, in a "post 9/11" United States, the flow of immigrants, illegal or otherwise, into the country is an ongoing topic of national debate. From *The New York Times*' coverage of Minutemen phenomenon on the U.S.-Mexico border, to *The Boston Globes*' report of anti-Muslim sentiment from some House Legislatures, the immigrant question has caused many citizens and lawmakers to rethink their ideas of what it means to be "American." Using both nations' struggles to constitute a national sense of identity and belonging, I aim to analyze the works of contemporary, diasporic, Indian writers. From Jhumpa Lahiri's Pulitzer Prize-winning novel, Namesake, now a motion picture success, to Kiran Desai's Inheritance of Loss, which won the 2006 Booker Prize, contemporary, diasporic, Indian fiction does more than simply relate common tropes of immigrant experience; novels like Zadie Smith's White Teeth, Monica Ali's Brick Lane, and Hanif Kureishi's The Buddha of Suburbia provide a space for dialogue that implicates the larger national politic in the ever fluid formation of national identity. And, through the dialectical comparison of "native" state policy to diasporic response, and vice-versa, this binary-busting 'involvedness,' to borrow the term from Zadie Smith, in today's "transnational moment" becomes increasingly visible.

CLASS PRESENTATION

Class members, Government

The world's developing countries are frequently ignored in today's "knowledge economy." However, the economically poor of these countries possess a wealth of knowledge and innovation that is often dismissed or unfairly exploited, rather than valued and connected to grassroots development. Professor Anil Gupta, by viewing the world's economically poor as a source of, rather than a sink for, knowledge and innovation, inspired this project. Our proposal is intended to help students embrace this worldview that sees great knowledge resources in developing countries, while at the same time helping innovators the world over to share, develop, and potentially patent their innovations. This presentation outlines a proposal to train and send student scouts to look for innovations while studying abroad. These scouts will commit to recording knowledge and innovations in a database, while maintaining a continued focus on ethical considerations. In addition to validating and sharing local knowledge and innovation, the proposed initiative will provide an avenue for knowledge holders to develop and patent their own innovations. It may also help create a non-commercial venue for communities from different countries to share and exchange innovations. Here, scouts will have the opportunity to connect innovation seekers with knowledge holders in an ethical way that prevents exploitation. The successful implementation of this proposal will result in knowledge scouts gaining a new perspective of the economically poor.

Return to Research Symposium Home Page

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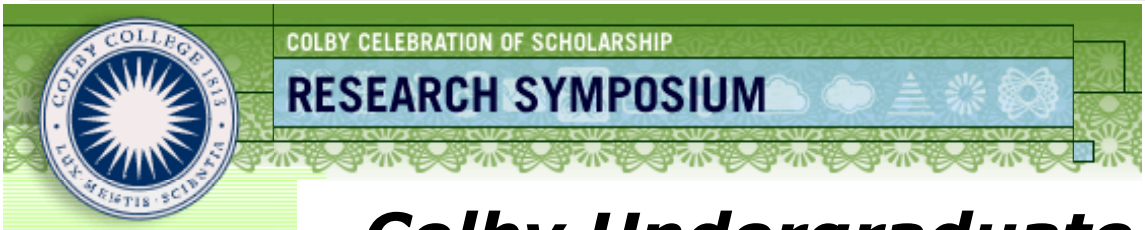

2007 Program

- Keynote Speaker
- Schedule - Wednesday
- Schedule - Thursday
- Schedule - Friday
- Poster Program
- Associated Sessions
- Abstracts
- Honors Program
- Participating Departments/ Programs

Research Symposium

Colby Undergraduate Research Symposium 2007

May 2-4, Colby College, Waterville, Maine

Keynote Address - *Dr. William Freudenburg*

May 2, 7:30 pm Olin 1

Honors Programs

Author	Department	Mentor	Location
Title			**Date Time**
Adriana Nordin Manan ('07)	Anthropology	Mills, Mary Elizabeth	
Citizenship and Boundary Setting in Multiethnic States: The Case of Refugees in Malaysia and Ecuador			:
Adam Robbins ('07)	Anthropology	Mills, Mary Elizabeth	
Constructing the Mosaic: Bonds, Tensions and Contexts within Filipino NGOs			:
Valerie Friedman ('07)	Anthropology	Anderson, Jeffrey D.	
How People Interpret Photojournalistic Images			:
Carolyn Deuschle ('07)	Anthropology	Anderson, Jeffrey D.	
Photography and the Farm Security Administration			:
Valerie Friedman ('07)	Anthropology	Jeffrey D. Anderson	Whitney Room
Photojournalistic Manipulations of Reality: A Globalized Foucauldian Analysis			May 3
			Whitney

Adam Robbins ('07)	Anthropology	Mary Elizabeth Mills	Room
World Bank -- CPA Conflict: The Struggle to Define Human Rights and Development in the Philippines			May 3
Adriana Nordin Manan ('07)	Anthropology	Mary Elizabeth Mills	Whitney Room
Citizenship and Boundary Setting in Multiethnic States: The Case of Refugees in Malaysia and Ecuador			May 3 30
Jessica Kaplan ('07)	Biology	Hannum, Lynn	
A Study of Circadian Patterns and Phagocytic Activity in the Innate Immune Systems of Zebrafish			:
Leigh Audin ('07)	Biology	Wilson, W. Herbert, Jr.	
Can the American Lobster, Homarus americanus, Detect Other Lobsters When Selecting a Shelter by Using Water Born Chemical Cues?			:
Lee Kozakiewicz ('07)	Biology	Fekete, Frank A.	
Confirmation of Horizontal Gene Transfer of merA and Antibiotic-Resistance Genes in Hatchery Lake Trout GI Microflora			:
Katharine Dziedzic ('07)	Biology	Kavaler, Peter Joshua	
Does Pax2 Regulate Crystallin?			:
Emily Devlin ('07)	Biology	Stone, Judy L.	
Genetic Variation in Isotria medeoloides			:
Tara Bergin ('07)	Biology	Bevier, Catherine R.	
Hormonal Influence on Butterfly Territoriality and Aggressive Behavior			:
Gregory Engel ('07)	Biology	Tilden, Andrea R.	
Influence of Melatonin on Neurite Growth and Regeneration in Crustations			:
Amanda McGarry ('07)	Biology	Bevier, Catherine R.	
Mate Choice in the Zebra Finch Taeniopygia guttata			:
Malcolm Itter ('07)	Biology	Stone, Judy L.	
Predicting the succession of northern hardwood forests through finite Markov Chains.			:
Anne Cuttler ('07)	Biology	Tilden, Andrea R.	
The influences of melatonin on neural growth and regeneration in crustaceans			:
Sarah Smiley ('07)	Biology	Kavaler, Peter Joshua	
The regulation of D-Pax2 by senseless			:
Leigh Audin ('07)	Biology	W. Herbert Wilson	Olin 1
Can the American Lobster, Homarus americanus, Detect Other Lobsters			

When Selecting a Shelter by Using Water Born Chemical Cues?			May 4
Gregory Engel ('07)	Biology	Andrea R. Tilden	Olin 1
Characterization of Cells Cultured from Fiddler Crab X-Organs			May 4
Katharine Dziedzic ('07)	Biology	Peter Joshua Kavaler	Olin 1
D-Pax2 Regulates Crystallin in the Developing Drosophila Eye			May 4
Tara Bergin ('07)	Biology	Catherine R. Bevier	Olin 1
Hormonal Influence on Butterfly Territoriality and Aggressive Behavior			May 4
Anne Cuttler ('07)	Biology	Andrea R. Tilden	Olin 1
The Neuroprotective Effects of Melatonin on Neuronal Growth in Crustaceans			May 4
Amanda McGarry ('07)	Biology	Catherine R. Bevier	Olin 1
Mate Choice in the Zebra Finch Taeniopygia guttata			May 4 20 minutes
Emily Devlin ('07)	Biology	Judy L. Stone	Olin 1
Geographic Distribution of Genetic Variation in Isotria medeoloides			May 4 30
Lee Kozakiewicz ('07)	Biology	Frank A. Fekete	Olin 1
Confirmation of Horizontal Gene Transfer of Mercury and Antibiotic Resistance Determinants in Hatchery Lake Trout Gastrointestinal Tract Microflora			May 4 ask bio dept
Bernadette Bibber ('07)	Chemistry	King, D. Whitney	
A Biogeochemical Model for Eutrophication of East Pond, Maine			:
Eric Bergh ('07)	Chemistry	Conry, Rebecca R.	
Bioinorganic Chemistry			:
Aaron Bradford ('07)	Chemistry	Rice, Kevin P.	
Carbamoylation effects from sulfonylhydrazines on Homologous Recombination			:
Jennifer Nguyen ('07)	Chemistry	Thamattoor, Dasan M.	
Carbene Chemistry			:
Cedric Owens ('07)	Chemistry	Rebecca R. Conry	
Copper(1) Complexes with a NS2macrocyclic Ligand Bearing Various Aryl Groups			:
Cedric Owens ('07)	Chemistry	Conry, Rebecca R.	
Copper(1) Complexes with a NS2macrocyclic ligand brearing various aryl groups			:

Rebecca Goldstein ('07)	Chemistry	Thamattoor, Dasan M.	
Independent Research			:
Emily McClure ('07)	Chemistry	Fekete, Frank A.	
Isolation and Characterization of Mercury and Antibiotic Resistant Bacterial Strains from Hatchery Fish			:
Ta-Chung Ong ('07)	Chemistry	D. Whitney King	
Photochemical production of micromolar superoxide standards in aqueous solution.			:
Ta-Chung Ong ('07)	Chemistry	King, D. Whitney	
Photochemical production of reactive oxygen species in a well-defined media			:
Adam Newman ('07)	Chemistry	Julie T. Millard	
Quantitative PCR Suggests Preferential Nuclear DNA Alkylation by Epichlorohydrin in the Chicken Genome			:
Adam Newman ('07)	Chemistry	Millard, Julie T.	
undetermined			:
Thomas Cook ('07)	Computer Science	Skrien, Dale J.	
GAUGUIN: Generating Art Using Genetics and User Input Nicely			:
Thomas Goth ('07)	Computer Science	Skrien, Dale J.	
Honors Project: Modeling disease suceptibility			:
Andreea Olea ('07)	Computer Science	Augustine, John	
OPTIMIZATIONS FOR HW/SW PARTITIONING			:
Eleanor O'Rourke ('07)	Computer Science	Skrien, Dale J.	
POV-Ray Interactive Tutorial			:
Canaan Morse ('07)	East Asian Studies	Besio, Kimberly A.	
'Beat' to a Chinese Rhythm: Wang Shuo and 'The Stewardess'			:
Canaan Morse ('07)	East Asian Studies	Kimberly A. Besio	Smith Room
'The Stewardess': Chinese Author Wang Shuo in Translation			May 2
Aimee Williams ('07)	Economics	Reid, Clifford E.	
An Analysis of the Effectiveness and Impacts of Child Cap Provisions in Welfare Reform			:
Michael Aquino ('07)	Economics	Nelson, Randy A.	
Do Mutual Fund Strategies Present Predicable Returns Under Certain Economic Conditions?			:

Bac Cuong ('07)	Economics	Meehan, James W., Jr.	
Performance of NBA Athletes During Contract Year			:
Horacio Diaz Adda ('07)	Economics	Long, Jason M.	
Social Cohesion: Myth or Reality			:
Carolyn Adler ('07)	Economics	Nelson, Randy A.	
The Determinants of Recovery Rates on Defaulted Corporate Securities: Why do Fallen Angels recover more than Original High Yield Issues?			:
Magda Tsaneva ('07)	Economics	Franko, Patrice M.	
Voices of the poor: Poverty and Growth in Albania			:
Aimee Williams ('07)	Economics	Clifford E. Reid	Smith Room
An Analysis of the Effectiveness and Impacts of Child Cap Provisions in Welfare Reform			May 4
Michael Aquino ('07)	Economics	Randy A. Nelson	Smith Room
Can the Business Cycle Be Used to Create Predictable Mutual Fund Outperformance?			May 4
Carolyn Adler ('07)	Economics	Randy A. Nelson	Smith Room
The Determinants of Recovery Rates on Defaulted Corporate Securities: Why do Fallen Angels recover more than Original High Yield Issues?			May 4
Magda Tsaneva ('07)	Economics	Patrice M. Franko	Smith Room
Voices of the Poor: Poverty and Growth in Albania			May 4
Horacio Diaz Adda ('07)	Economics	Jason M. Long	Smith Room
The Divergent Effect of Social Cohesion on Economic Growth in East Asia and Latin America			May 4 40
Clifford White ('07)	English	Harris, Peter B.	
'A Damp, Drizzly November in my Soul': The Disaffection of Ishmael, Ahab and the Crew in Melville's Moby-Dick			:
Laura Williamson ('07)	English	Mannocchi, Phyllis F.	
'The Impact of Banned Books in America and England: A Close Look at Joyce's 'Ulyssees,' Miller's 'Tropic of Cancer' and Radcliff's			:
Melinda Favreau ('07)	English	Spark, Debra A.	
A Collection of Short Stories			:
Megan Deeley ('07)	English	Narin van Court, Elisa M.	
A Study of the Ambiguity of Gender and Religion in The Merchant of Venice			:

Naomi Wilson ('07)	English	Stubbs, Katherine M.	
Edith Wharton and the Ideologies of Femininity in 19th Century American Society			:
Allison Cole ('07)	English	Boylan, Jennifer Finney	
Fictional Maine Women: a Creative Writing Project			:
Anna Gillespie ('07)	English	Mazzeo, Tilar J.	
Jane Austen: Didactic of Feminist?			:
Carolina Sicard ('07)	English	Thorn, Jennifer J.	
Latina Literature: Strong Roots, Powerful Futures			:
Matthew Crane ('07)	English	Onion, Patricia A.	
Literary Ambiguity: Shakespeare and the Resonance of Language			:
Delwyn Webster ('07)	English	Mazzeo, Tilar J.	
Lord Byron's Literary Imitations & Relations			:
Jessica Bernhard ('07)	English	Sadoff, Ira	
Meeting a Child by the River: Poems			:
Sasha Swarup-Deuser ('07)	English	Blevins, Adrian	
Poetry Manuscript			:
Elizabeth Stovall ('07)	English	Blevins, Adrian	
Poetry Party			:
Lucy Hitz ('07)	English	Blevins, Adrian	
Poetry Portfolio/Thesis			:
Robin Respaut ('07)	English	Thorn, Jennifer J.	
Postcolonial Madness in novels by Albert Wendt, Tsitsi Dangarembga, and Edwidge Danticat			:
Elizabeth Finn ('07)	English	Sagaser, Elizabeth H.	
Raising Character: The Role of Father-Child Relationships in Characterization in Shakespeare			:
Hanna Stailey ('07)	English	Onion, Patricia A.	
Scottish Literature			:
Stephen Plocher ('07)	English	Boylan, Jennifer Finney	
Short Fiction			:
Kyle Haskett ('07)	English	Boylan, Jennifer Finney	

Studies in Creative Writing			:
Drew Moreland ('07)	English	Boylan, Jennifer Finney	
Television Pilot Screenplay			:
Elizabeth Boeheim ('07)	English	Harris, Peter B.	
The Aesthetic in William Carlos Williams's Poetry			:
Peter Carty ('07)	English	Onion, Patricia A.	
The Apocolyptic Landscape in Cormac McCarthy's Works			:
Geoffrey Meldahl ('07)	English	Mazzeo, Tilar J.	
The Heroic Byron			:
Charles Patton ('07)	English	Bryant, Cedric Gael	
The Politics of the Vernacular Tradition in African American Poetry			:
Patrick Benton ('07)	English	Onion, Patricia A.	
Trickster in the Works of Louise Erdrich			:
Kaitlin Gangl ('07)	English	Thorn, Jennifer J.	
Women Makine Progress?: A Study of Wide Sargasso Sea as a Response to Jane Eyre			:
Matthew Crane ('07)	English	Patricia A. Onion	Hurd Room
Literary Ambiguity: Shakespeare and the Resonance of Language			May 4
Patrick Benton ('07)	English	Patricia A. Onion	Hurd Room
The Agent of Change: Trickster in Ojibwa Oral Narratives and in the Works of Louise Erdrich			May 4
Peter Carty ('07)	English	Patricia A. Onion	Hurd Room
The Apocolyptic Landscape in Cormac McCarthy's Works			May 4
Elizabeth Finn ('07)	English	Elizabeth H. Sagaser	Hurd Room
The Apple and the Tree: Shakespeare's Use of Father-Child Relationships in Character Construction			May 4
Kaitlin Himmelmann ('07)	Environmental Studies	Carlson, Gail	
A study on the local and global health impacts of Colby College's purchasing practices			:
Kaitlin Himmelmann ('07)	Environmental Studies	Gail Carlson	Hurd Room
Endocrine Disrupting Chemicals and Colby's Purchasing Practices			May 3

Alec Worsnop ('07)	Government	Denoeux, Guilain P.	
Lebanese Democracy in a Comparative Perspective			:
Daniel Melega ('07)	Government	Corrado, Anthony J., Jr.	
National Election Reform: The Presidential Primary			:
Michael Deheeger ('07)	Government	Armony, Ariel C.	
Strategies for Unity in the Burmese Democracy Movement in Exile			:
Nicole Lavery ('07)	History	Leonard, Elizabeth D.	
American's Hidden Convict Past			:
Samantha Lawson ('07)	History	Josephson, Paul R.	
Battered Women Who Kill: The Legal History of Domestic Violence in America			:
Cornelia Sage ('07)	History	Fallaw, Ben W.	
Clandestine prisons during the Argentine dictatorship			:
Merle Eisenberg ('07)	History	Taylor, Larissa J.	
Demographic Changes in the 7th Century Byzantine Empire			:
Alison McArdle ('07)	History	Leonard, Elizabeth D.	
Divorce in New England during the Early Republican Era			:
Mary Distinti ('07)	History	Scheck, Raffael M.	
First Response: America's Reaction to the Armenian Massacres, 1894-1896			:
Suzanne Swartz ('07)	History	Scheck, Raffael M.	
From Criminals and Traitors to Martyrs and Heroes: German Memory of Active Resistance to National Socialism			:
Christopher Hoffman ('07)	History	Leonard, Elizabeth D.	
Horace Mann and Common Schools: Educational Opportunity or Social Control?			:
Robert Mand ('07)	History	Fallaw, Ben W.	
Mexican involvement in the Sandinista Revolutions: Socialist realities?			:
Andrew Herrmann ('07)	History	Taylor, Larissa J.	
Rousseau's Influence on Early America			:
Mary Distinti ('07)	History		Smith Room
First Response: America's Reaction to the Armenian Massacres, 1894-1896			May 3
Cornelia Sage ('07)	History	Ben W. Fallaw	Smith Room

Museo de la Memoria: An Exploration through Memory of ESMA			May 3
Suzanne Swartz ('07)	History	Raffael M. Scheck	Smith Room
Obstacles and Stepping Stones to the Hero's Pedestal: Reunified Germany's Selective Commemoration of Resisters to National Socialism			May 3
Merle Eisenberg ('07)	History	John P. Turner	Smith Room
Demographic and Religious Changes in Sixth and Seventh Century Romano-Byzantine Edessa			May 4
Christopher Hoffman ('07)	History	Elizabeth D. Leonard	Smith Room
Horace Mann and Common Schools: Moral Enlightment and Economic Opportunity			May 4
Alison McArdle ('07)	History	Elizabeth D. Leonard	Smith Room
Personal Politics: The Intersection of Federalism and Marriage			May 4
Anne Wachtel ('07)	Independent Studies	Tappan, Mark B.	
Education and Cultural Identity in Native American Schools			:
Christopher Zajchowski ('07)	Independent Studies	Roy, Anindyo	
Themes of Identity and Hybridity in Modern Indian Literature			:
Christopher Zajchowski ('07)	Independent Studies	Anindyo Roy	Smith Room
Themes of Belonging and Indentity in 'Diasporic' Indian Literature			May 2
Katelyn Trionfetti ('07)	International Studies	Scheck, Raffael M.	
The Criminalization of Wartime Rape in International Law			:
Ivica Petrikova ('07)	International Studies	Armony, Ariel C.	
The impact of foreign aid on children's rights (specifically the ones connected with the issue of child labor)			:
Ivica Petrikova ('07)	International Studies	Ariel C. Armony	Smith Room
TOO MANY BAD COOKS SPOILING THE BROTH? Analysis of the Effectiveness of NGO Work in Solving the Problem of Child Labor (field research conducted in El Salvador)			May 3 30
Thomas Hulse ('07)	Mathematics	Gouvea, Fernando Q.	
Algebraic Topology			:
Whitney Simmonds ('07)	Music	Nuss, Steven R.	
Analysis of Schoenberg's 'Six Little Piano Pieces', Op. 19			:
Gjergji Gaqi ('07)	Music	Saunders, Steven E.	

Performance and Analysis: The Op. 31 piano sonatas as a display of Beethoven's transitional period			:
Joel Biron ('07)	Music	Hallstrom, Jonathan F.	
Scene from 'The Necklace' Operetta			:
Anne Wachtel ('07)	None or Unknown	Tappan, Mark B.	
blank			:
O. Orantes ('07)	Philosophy	Edelglass, William	
			:
Allyson Rudolph ('07)	Philosophy	Calhoun, Cheshire C.	
Group and individual blame			:
Elizabeth Coogan ('07)	Philosophy	Calhoun, Cheshire C.	
Health care in the just liberal state.			:
Adam Marvin ('07)	Philosophy	Gordon, Jill P.	
Normative Constitutionalism: Keeping the Government in Check			:
Arturs Vrublevskis ('07)	Physics and Astronomy	Robert T. Bluhm	
Constrained Hamiltonian Analysis of Vector Theories with Spontaneous Lorentz Violation			:
Lent Johnson ('07)	Physics and Astronomy	Murray F. Campbell	
Planetary Nebulae in M82: Kinematic and Photometric Analysis			:
Lent Johnson ('07)	Physics and Astronomy	Campbell, Murray F.	
Rotation Curve Studies of Elliptical Galaxies Using Planetary Nebulae			:
Ryan Holben ('07)	Physics and Astronomy	Conover, Charles W.S., III	
Spectroscopy and RCAP of Sodium Atoms			:
Roy Wilson ('07)	Physics and Astronomy	Tate, Duncan A.	
Temperaure Control in Ultra Cold Plasmas			:
Thomas Hulse ('07)	Physics and Astronomy	Bluhm, Robert T., Jr.	
Theoretical Investigations of Spontaneous Lorentz Violation			:
Roy Wilson ('07)	Physics and Astronomy	Duncan A. Tate	Smith Room
Temperature Control in Ultra Cold Plasmas			May 3
Ira Panova ('07)	Psychology	Pittman, Thane S.	
			:

Kaitlin Hanley ('07)	Psychology	Chentsova Dutton, Yulia	
Depression and Anhedonia: A Study of Cognitive and Experiential Deficits of Experiencing Pleasure in Depressed Individuals			:
Marissa Meyer ('07)	Psychology	Yates, Jennifer R.	
Developmental Timing of an Enriched Environment in Rats			:
Kristen Thatcher ('07)	Psychology	Chentsova Dutton, Yulia	
Study of Stress, Emotion and the Immune System			:
Katherine Lillehei ('07)	Psychology	Yates, Jennifer R.	
The Differential Response of Male and Female Anorexic Mice to Tyrosine			:
Adrian Gilmore ('07)	Psychology	Yates, Jennifer R.	
The Effects of Acute Testosterone Exposure on Aggression in Anolis carolinensis lizards			:
Kaitlin Hanley ('07)	Psychology	Yulia Chentsova Dutton	Whitney Room
Anhedonia and Depression: Anticipation, Consummatory, and Recall Deficits			May 4
Marissa Meyer ('07)	Psychology	Jennifer R. Yates	Whitney Room
Developmental Timing of Exposure to an Enriched Environment in Rats			May 4
Adrian Gilmore ('07)	Psychology	Jennifer R. Yates	Whitney Room
The Effects of Acute Testosterone Exposure on Aggression in Anolis carolinensis Lizards			May 4
Kristen Thatcher ('07)	Psychology	Jennifer R. Yates	Whitney Room
The Immunological Effects of Written Disclosure in Athletes			May 4
Brian Fulmer ('07)	Science, Technology, and Society	Hale, Piers	
Political Biology: Thomas H. Huxley and Peter Kropotkin			:
Brian Fulmer ('07)	Science, Technology, and Society	Piers Hale	Smith Room
Political Biology: Peter Kropotkin and the Darwinian Revolution			May 2
Maro Asadoorian ('07)	Sociology	Campbell, Alec D.	
The Publishing Industry and American Intellectualism			:

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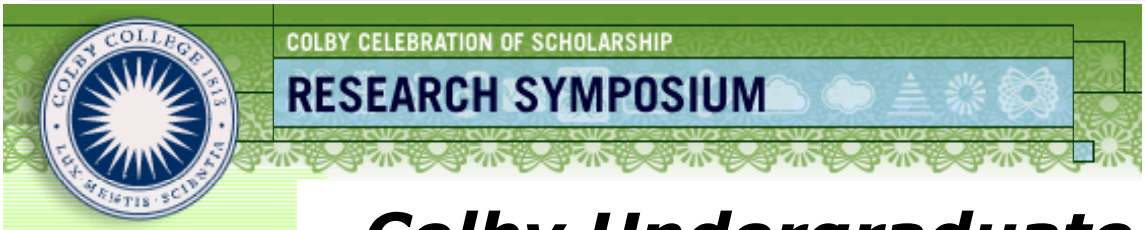

2007 Program

- Keynote Speaker
- Schedule - Wednesday
- Schedule - Thursday
- Schedule - Friday
- Poster Program
- Associated Sessions
- Abstracts
- Honors Program
- Participating Departments/ Programs

Research Symposium

Colby Undergraduate Research Symposium 2007

May 2-4, Colby College, Waterville, Maine

Students from the following departments/programs have already submitted titles for papers and posters:

Sponsoring Dept/Prgrm	Lead Author	Title	Date Time	Project Type	Mentor
American Studies	Meghan Church ('07)	**A Gay Gangsta: The Wire's Omar and Homosexuality on Television**	May 4 1:45 pm	Presentation	**Laura Saltz**
American Studies	Lindsay Tolle ('08)	**It [Doesn't] Always Got to be Blood: Alternative Kinship Systems and Agency of Naming and Self-Identity in 'Buffy the Vampire Slayer'**	May 4 1:30 pm	Presentation	**Laura Saltz**
American Studies	Elani Gonzalez ('07)	**Unlikely Romeo or a Modern Day Stepin Fetchit?: How Flavor of Love Negatively Portrays the African-American Community and Women on Television**	May 4 1:00 pm	Presentation	**Laura Saltz**
Anthropology	Valerie Friedman ('07)	**Photojournalistic Manipulations of Reality: A Globalized Foucauldian Analysis**	May 3 3:00 pm	Presentation	**Jeffrey D. Anderson**
Anthropology	Valerie Friedman ('07)	**Reclaiming the Power of Knowledge: How the Internet has Changed the Flow of Information**	May 2 2:00 pm	Presentation	**Catherine L. Besteman**
Anthropology	Amanda Hilton ('07)	**The Cultivation of The Body Shop LLC: the Rhetoric and Reality of**	May 2 1:30	Presentation	**Catherine L. Besteman**

		a 'Fair Trade' Corporation	pm		
Anthropology	Weather Potdevin ('07)	**The Language of Oil Companies, Politicians and Alaska Native Groups on Drilling for Alaskan Crude Oil and Natural Gases in the Arctic National Wildlife Refuge**	May 2 1:00 pm	Presentation	**Catherine L. Besteman**
Anthropology	Adam Robbins ('07)	**World Bank -- CPA Conflict: The Struggle to Define Human Rights and Development in the Philippines**	May 3 5:15 pm	Presentation	**Mary Elizabeth Mills**
Anthropology	Adriana Nordin Manan ('07)	**Citizenship and Boundary Setting in Multiethnic States: The Case of Refugees in Malaysia and Ecuador**	May 3 2:30 pm	Presentation	**Mary Elizabeth Mills**
Anthropology	Caitlin Gallagher ('07)	**The Influence of Heron's Mechanics on the Role of Temples in Alexandria**	May 2 2:30 pm	Presentation	**Catherine L. Besteman**
Biology	Christine Avena ('08)	**A Comparison of Avian Diversity in Pine Plantations and Cloud Forests of the Mazar Reserve, Southern Ecuador**	May 2 4:45 pm	Presentation	**Catherine R. Bevier**
Biology	Emily Wilson ('08)	**A Pollen Chase Experiment; Examining Varying Levels of Embryonic Inbreeding Depression**		Poster	**Judy L. Stone**
Biology	Kelly Bakulski ('07)	**Antimicrobial Properties of Two Purified Skin Peptides from the Mink Frog (Rana septentrionalis).**		Poster	**Catherine R. Bevier, Frank A. Fekete**
Biology	Leigh Audin ('07)	**Can the American Lobster, Homarus americanus, Detect Other Lobsters When Selecting a Shelter by Using Water Born Chemical Cues?**	May 4 1:15 pm	Presentation	**W. Herbert Wilson**
Biology	Tenzin Tsewang ('07)	**Characterization of AFN1, a gene associated with cereal grain germination**		Poster	**Russell R. Johnson**
Biology	Gregory Engel ('07)	**Characterization of Cells Cultured from Fiddler Crab X-Organs**	May 4 4:30 pm	Presentation	**Andrea R. Tilden**
		Characterization of the Antibiotic and Mercury			

Biology	Victoria Work ('08)	**Resistance Capabilities of Bacterial Strains Isolated from Soils of Avery Peak, Maine**		Poster	**Frank A. Fekete**
Biology	Jennifer Moody ('07)	**Characterization of the Pervasiveness of Mercury and Antibiotic Resistance Due to Co-selection Using Population Studies of Sphagnum Core Samples Dating Back 2000 Years**		Poster	**Frank A. Fekete**
Biology	Jessica Kaplan ('07)	**Circadian Patterns in the Innate Immune System of Zebrafish**	May 4 3:30 pm	Presentation	**Lynn Hannum**
Biology	Katharine Dziedzic ('07)	**D-Pax2 Regulates Crystallin in the Developing Drosophila Eye**	May 4 1:00 pm	Presentation	**Peter Joshua Kavaler**
Biology	Jessica Harold ('08)	**Determining the Effectiveness of Planted Corridors on the Atherton Tableland using Small Mammals as Indicators of Environmental Factors**	May 4 3:00 pm	Presentation	**David H. Firmage**
Biology	Kelsey Hilton ('08)	**Development of Microsatellite Primers in the Anemone Species Metridium Senile**		Poster	**Paul G. Greenwood**
Biology	Kristina Langenborg ('09)	**Effects of Environmental Conditions on Class-1 Integron Mediated Horizontal Gene Transfer in Aeromonas Salmonicida**		Poster	**Frank A. Fekete**
Biology	Jennifer Mizen ('08)	**Elephant-Bat Interactions: Commensalism at Work?**	May 2 4:15 pm	Presentation	**Catherine R. Bevier**
Biology	Kathryn Bizier ('08)	**Exploring Optimal Foraging Strategies in Woodpeckers**		Poster	**Catherine R. Bevier**
Biology	Tara Bergin ('07)	**Hormonal Influence on Butterfly Territoriality and Aggressive Behavior**	May 4 2:30 pm	Presentation	**Catherine R. Bevier**
Biology	Kate Ludwig ('08)	**Measuring Ultrasonic Communication Between Mouse Pups and Adult Mother Mice**		Poster	**Catherine R. Bevier**
	Cadran	**Microsatellite Screening for**			**Judy L.**

Biology	Cowansage ('08)	**Estimation of Selfing Rates in Witheringia solanacea**		Poster	**Stone**
Biology	Julia Germaine ('07)	**Phylogeography and Demographic History of Gray Foxes, Urocyon cinereoargenteus**		Poster	**Stacey L. Lance**
Biology	Kyla Wagman ('07)	**Size Distribution, Growth Rate, and Condition Factor of Negaprion brevirostris in Coastal Habitats of South Caicos, British West Indies**		Poster	**Catherine R. Bevier**
Biology	Katherine Renwick ('07)	**Small Mammal Assemblages under Urban Influence in Central Maine**		Poster	**Danielle Garneau**
Biology	Cheryl Hahn ('08)	**Social Cues and Their Effect on the Development of Learned Helplessness in Mice**		Poster	**Catherine R. Bevier**
Biology	Aynara Chavez-Munoz ('08)	**Studying the effects of chronic and acute stress on neurogenesis in cluster 10 and olfactory lobes of Fiddler crabs (Uca pugnax)**		Poster	**Andrea R. Tilden**
Biology	Jacqueline Beaupre ('08)	**The Concentration-dependant Effects of Hydrogen Peroxide on X-organ Neuron Growth in Fiddler Crab, U. pugliator.**		Poster	**Andrea R. Tilden**
Biology	Jonathan Lefcheck ('09)	**The Movement of the Gastropod Littorina littorea in the Intertidal Zone During the Onset of Winter**		Poster	**W. Herbert Wilson**
Biology	Anne Cuttler ('07)	**The Neuroprotective Effects of Melatonin on Neuronal Growth in Crustaceans**	May 4 4:00 pm	Presentation	**Andrea R. Tilden**
Biology	Katharine Harmon ('09)	**Transcription Targets of D-Pax2 Activity in Drosophila Sensory Systems.**		Poster	**Peter Joshua Kavaler**
Biology	Sarah Smiley ('07)	**Transcriptional Regulation of D-Pax2 in Drosophila External Sensory Organs.**		Poster	**Peter Joshua Kavaler**
Biology	JaeHee Yun ('08)	**Transformation of merA Genes and Antibiotic Resistance among Gram-negative Bacteria**		Poster	**Frank A. Fekete**

Biology	Sharon Fuller ('08)	**Using Genetic Analysis to Track the Spread of Tick-Borne Diseases in Maine**		Poster	**Stacey L. Lance**
Biology	Amanda McGarry ('07)	**Mate Choice in the Zebra Finch Taeniopygia guttata**	May 4 2:00 pm	Presentation	**Catherine R. Bevier**
Biology	Emily Devlin ('07)	**Geographic Distribution of Genetic Variation in Isotria medeoloides**	May 4 1:30 pm	Presentation	**Judy L. Stone**
Biology	Lee Kozakiewicz ('07)	**Confirmation of Horizontal Gene Transfer of Mercury and Antibiotic Resistance Determinants in Hatchery Lake Trout Gastrointestinal Tract Microflora**	May 4 3:00 pm	Presentation	**Frank A. Fekete**
Chemistry	Cedric Owens ('07)	**Copper(1) Complexes with a NS2macrocyclic Ligand Bearing Various Aryl Groups**		Poster	**Rebecca R. Conry**
Chemistry	Marguerite Davis ('07)	**Inhibition of Human DNA Polymerase-β by Cloretazine, a Novel Anticancer Drug**		Poster	**Kevin P. Rice**
Chemistry	Cassandra Newell ('08)	**Ion-Pairing and Molecular Recognition**		Poster	**Thomas W. Shattuck**
Chemistry	Erin McGowan ('08)	**Native Polyacrylamide Gel Electrophoresis Assessment of DNA Bending upon Diepoxybutane and Epihalohydrin Cross-linking**		Poster	**Julie T. Millard**
Chemistry	Ta-Chung Ong ('07)	**Photochemical production of micromolar superoxide standards in aqueous solution.**		Poster	**D. Whitney King**
Chemistry	Michelle Starr ('07)	**Potential DNA Binding Boron Neurton Capture Therapy: Carborane-tethered Polyamines**		Poster	**Marcus A. Juhasz**
Chemistry	Megan Watts ('08)	**Quantitative PCR Methods for Assessing Epichlorohydrin Damage within Chicken Erythroid Cells**		Poster	**Julie T. Millard**
Chemistry	Adam Newman ('07)	**Quantitative PCR Suggests Preferential Nuclear DNA Alkylation by Epichlorohydrin in the Chicken Genome**		Poster	**Julie T. Millard**

Chemistry	W. Crannell ('08)	**Selective Synthesis of Oxacalix[6]arenes and Mixed Oxacalix[4]arenes**		Poster	**Jeffrey L. Katz**
Chemistry	Douglas Rooke ('08)	**Synthesis of Caged and Para-Linked Oxacalixarenes**		Poster	**Jeffrey L. Katz**
East Asian Studies	Canaan Morse ('07)	**'The Stewardess': Chinese Author Wang Shuo in Translation**	May 2 2:00 pm	Presentation	**Kimberly A. Besio**
Economics	Aimee Williams ('07)	**An Analysis of the Effectiveness and Impacts of Child Cap Provisions in Welfare Reform**	May 4 1:00 pm	Presentation	**Clifford E. Reid**
Economics	Michael Aquino ('07)	**Can the Business Cycle Be Used to Create Predictable Mutual Fund Outperformance?**	May 4 1:30 pm	Presentation	**Randy A. Nelson**
Economics	Jennifer Murphy ('07)	**Interest-Free Banking, Plus Interest?: A Study of Islamic Banking in Pakistan**		Poster	**Michael R. Donihue**
Economics	Isaac Opper ('10)	**The Conflict between Montana and Wyoming over Coal Bed Methane Production in the Powder River Basin**	May 2 3:15 pm	Presentation	**Thomas H. Tietenberg**
Economics	Carolyn Adler ('07)	**The Determinants of Recovery Rates on Defaulted Corporate Securities: Why do Fallen Angels recover more than Original High Yield Issues?**	May 4 2:00 pm	Presentation	**Randy A. Nelson**
Economics	Magda Tsaneva ('07)	**Voices of the Poor: Poverty and Growth in Albania**	May 4 2:30 pm	Presentation	**Patrice M. Franko**
Economics	Horacio Diaz Adda ('07)	**The Divergent Effect of Social Cohesion on Economic Growth in East Asia and Latin America**	May 4 3:00 pm	Presentation	**Jason M. Long**
Education and Human Development / Anthropology	Anne Wachtel ('07)	**'A Little Child Shall Lead Them': Education and Cultural Identity Destruction in the Great 'Civilizing' of Indian Country**	May 4 2:15 pm	Presentation	**Jeffrey D. Anderson, Mark B. Tappan**
Education and Human Development	Rebecca Anderson ('07)	**From Policy to Practice: A Look at the Implementation of the No Child Left Behind Act in Maine**	May 4 2:00 pm	Presentation	**Mark B. Tappan**
Education and Human Development	Ryan Weaver ('07)	**The Hill & the 'Ville**	May 4 2:30 pm	Presentation	**Mark B. Tappan**

Education and Human Development	G. Albaugh ('07)	**Through the eyes of youth: A documentary**	May 4 3:00 pm	Presentation	**Mark B. Tappan**
English / Philosophy	Catherine Downing ('07)	**Interlocking Oppressions of Sisterhood: (Re) Presenting the Black Woman in Nineteenth Century Blackface Minstrelsy**	May 3 10:30 am	Presentation	**Cedric Gael Bryant, Jill P. Gordon**
English	Matthew Crane ('07)	**Literary Ambiguity: Shakespeare and the Resonance of Language**	May 4 4:15 pm	Presentation	**Patricia A. Onion**
English	Patrick Benton ('07)	**The Agent of Change: Trickster in Ojibwa Oral Narratives and in the Works of Louise Erdrich**	May 4 3:30 pm	Presentation	**Patricia A. Onion**
English	Peter Carty ('07)	**The Apocolyptic Landscape in Cormac McCarthy's Works**	May 4 4:00 pm	Presentation	**Patricia A. Onion**
English	Elizabeth Finn ('07)	**The Apple and the Tree: Shakespeare's Use of Father-Child Relationships in Character Construction**	May 4 4:30 pm	Presentation	**Elizabeth H. Sagaser**
Environmental Studies	Emma Carlson ('08)	**Agriculture and Us: an Assessment of the Health Impacts of Organic Produce in Central Maine**		Poster	**Gail Carlson**
Environmental Studies	Tammy Lewin ('07)	**An Index for Social Welfare**		Poster	**Curtis Bohlen**
Environmental Studies	Elizabeth Benson ('07)	**Analysis of Optimum Location, Viability, and Potential Effects of Wind Farm Construction in Maine**		Poster	**Curtis Bohlen**
Environmental Studies	Kali Abel ('07)	**Attempts on the South Pole: A Geographic Look at the Factors Contributing to Success or Failure in Early Antarctic Exploration**		Poster	**Curtis Bohlen**
Environmental Studies	Kali Abel ('07)	**Competition in the Great Barrier Reef: A Field Study of Two Territorial Damselfish Species, Lizard Island, Australia**		Poster	
Environmental Studies	Sarah Stevens ('09)	**Conceptions of Wilderness Through GIS**		Poster	**Curtis Bohlen**
Environmental Studies	Ryan Weaver ('07)	**Don't Take My Breath Away: The Human Health Impacts of Radon in Maine**		Poster	**Gail Carlson**

Environmental Studies	Kaitlin Himmelmann ('07)	**Endocrine Disrupting Chemicals and Colby's Purchasing Practices**	May 3 1:00 pm	Presentation	**Gail Carlson**
Environmental Studies	Kelly Bakulski ('07)	**Environmental Health Screening Using GIS**		Poster	**Curtis Bohlen**
Environmental Studies	Michael Piacentini ('07)	**From Sewage to Syringes: The Health Impacts of Waste Management in Central Maine**		Poster	**Gail Carlson**
Environmental Studies	Julie Hike ('07)	**Global and Local Human Health Implications of Global Climate Change**		Poster	**Gail Carlson**
Environmental Studies	Alexander McPherson ('07)	**Green Building in Maine**		Poster	**David H. Firmage**
Environmental Studies	Jamie Kline ('07)	**Homelessness in California: Using GIS to relate Density of Populations with Services and Resources Provided for the Homeless**		Poster	**Curtis Bohlen**
Environmental Studies	Megan Saunders ('09)	**Human Health Effects of Household Furnishings and Electronics**		Poster	**Gail Carlson**
Environmental Studies	Elizabeth Benson ('07)	**Human Health Impacts of Contaminants Found in Local Drinking Water Supply**		Poster	**Gail Carlson**
Environmental Studies	Kali Abel ('07)	**Invasive Species Analysis and Public Education, Reynolds Forest, Sidney, Maine**		Poster	
Environmental Studies	Caitlin Casey ('09)	**Lead and Human Health in Maine: Is It Still a Problem?**		Poster	**Gail Carlson**
Environmental Studies	Lent Johnson ('07)	**Mississippi River Flood Control: A Priority Analysis using GIS**		Poster	**Curtis Bohlen**
Environmental Studies	Andrew Adelfio ('07)	**Modeling Potential Ski Resort Development in Montana Using Geographic Information Systems**		Poster	**Curtis Bohlen**
Environmental Studies	Kerry Whittaker ('08)	**Music as Place: What Happens When we Combine GIS and Music Symbology?**		Poster	**Curtis Bohlen**
Environmental Studies	Renzo Mendoza Castro ('07)	**Negotiating the Next Climate Treaty**	May 3 1:30 pm	Presentation	**Liliana Botcheva-Andonova**
		Personal Care			

Environmental Studies	Caitlin Blodget ('07)	**Products: The Effects of Phthalates, Parabens and Fragrances on Human Health**		Poster	**Gail Carlson**
Environmental Studies	Eitan Green ('09)	**Predicting Rock and Ice Fall on the Disappointment Clever on Mount Rainier: A Model for Increasing Safety on Future Routes**		Poster	
Environmental Studies	Eva Farina-Henry ('07)	**Revisiting the Oregon Trail**		Poster	**Curtis Bohlen**
Environmental Studies	Emma McLeavey-Weeder ('09)	**Silent Killers: A Community Assessment of Outdoor Air Pollution in Maine**		Poster	**Gail Carlson**
Environmental Studies	Anna Barnwell ('08)	**THE HUMAN HEALTH IMPACTS OF HOUSEHOLD CLEANERS**		Poster	**Gail Carlson**
Environmental Studies	Rachel Freierman ('09)	**The Economic Effects of Ski Resorts on Maine Communities**		Poster	**Curtis Bohlen**
Environmental Studies	Sarah Bartels ('08)	**The Human Health Effects of Pesticides on Maine Communities**		Poster	**Gail Carlson**
Environmental Studies	Alexander McPherson ('07)	**Wetland Remediation by Aroostook County Potato Farmers: A GIS Analysis**		Poster	**Curtis Bohlen**
Environmental Studies	Jamie O'Connell ('08)	**What's in your Nalgene? Health Effects of PVC and Polycarbonate Plastics**		Poster	**Gail Carlson**
Geology	Brent Aigler ('08)	**A Hydrological and Sedimentological Study of the Pointe at Jamestown Detention Pond, James City County, Virginia**		Poster	**Robert E. Nelson**
Geology	C. Clark ('08)	**Close-Interval Pollen Analysis as a Proxy for Determining European Impact on Hamilton Pond Bog in Kennebec County Maine.**		Poster	**Robert E. Nelson**
Geology / Environmental Studies	Kali Abel ('07)	**Drought in Central Maine: Evidence of a Paleoclimatic Event from Tree Ring Analysis**		Poster	**Robert E. Nelson**
		Foraminifera from the Presumpscot Formation: Evidence			

Geology	Elizabeth Littlefield ('07)	**for Paleosalinity and Paleobathymetry in the Waning Phases of Marine Emergence of Central Maine**		Poster	**Robert E. Nelson**
Geology	Bradford Cantor ('08)	**Late Holocene vs. Modern Environments of Central Maine: Comparison of Pollen, Plant Macrofossils, and Coleopteran Assemblages with the Historical Record**		Poster	**Robert E. Nelson**
Geology	Jamie Kline ('07)	**Marine Ostracodes from the Latest Pleistocene of Central Maine: Evidence for Paleosalinity and Paleobathymetry in the Waning Phases of Marine Emergence**		Poster	**Robert E. Nelson**
Geology	Janet Weidner ('07)	**Rock Detective's Introduction to Whale Ear Bone Fossils for Grades K-12**		Poster	**Robert A. Gastaldo**
Geology	Newton Krumdieck ('07)	**The Origins of the Norridgewock Sand Plain, Somerset County, Maine**		Poster	**Robert E. Nelson**
German/Russian	Elise Washer ('07)	**'An Upside Down World: The Opposition between Light and Dark in Bulgakov's Master and Margarita'**	May 4 3:45 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Benjamin Poulos ('08)	**'Good and Evil, The Devil and Stalin in Bulgakov's Master and Margarita'**	May 4 4:30 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Jessica Zia ('07)	**'Off with His Head!': Inexplicable Faith in Bulgakov's Master and Margarita**	May 4 4:00 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Nicole Crocker ('09)	**The Bird and Its Flight: A Struggle for Freedom in Bulgakov's Master and Margarita**	May 4 3:15 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Cassandra Newell ('08)	**The Corruption of Morals in Bulgakov's 'Master and Margarita'**	May 4 4:15 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Magda Tsaneva ('07)	**The Image of the Devil in Bulgakov's 'Master and Margarita'**	May 4 4:45 pm	Presentation	**Julie W. de Sherbinin**
German/Russian	Holly Duello ('07)	**The Nighttime is the Right Time: Images of Power and Influence in Bulgakov's Master and Margarita**	May 4 3:30 pm	Presentation	**Julie W. de Sherbinin**
		ETA and Basque	May 3		

Government	Christopher Appel ('08)	**Nationalism: Prospects for Peace**	3:30 pm	Presentation	**Guilain P. Denoeux**
Government	James Cryan ('07)	**Sustainable Development in Practice: The Handicraft Sector of Carapegu Paraguay.**	May 3 4:00 pm	Presentation	**Liliana Botcheva-Andonova**
Government	Sarah Faasse ('07)	**Tracing the Evolution of the War Power and the Balance Among the Branches**	May 4 4:30 pm	Presentation	**Joseph R. Reisert**
Government	Class members	**Class presentation**	May 3 1:00 pm	Presentation	**Ariel C. Armony**
History	Merle Eisenberg ('07)	**Demographic and Religious Changes in Sixth and Seventh Century Romano-Byzantine Edessa**	May 4 5:15 pm	Presentation	**John P. Turner, Larissa J. Taylor**
History	Andrew Herrmann ('07)	**Devious Politics, Demon Rum: Neal Dow and the Battle for the First Maine Prohibition Law**	May 4 4:15 pm	Presentation	**Elizabeth D. Leonard, Jason M. Opal**
History	Samantha Lawson ('07)	**Enduring Violence:A History of Domestic Violence in New England and the Legislative Efforts that Fought Back, 1641-1992**	May 3 5:15 pm	Presentation	**Elizabeth D. Leonard**
History	Mary Distinti ('07)	**First Response: America's Reaction to the Armenian Massacres, 1894-1896**	May 3 4:30 pm	Presentation	**Robert S. Weisbrot**
History	Christopher Hoffman ('07)	**Horace Mann and Common Schools: Moral Enlightment and Economic Opportunity**	May 4 4:45 pm	Presentation	**Elizabeth D. Leonard**
History	Cornelia Sage ('07)	**Museo de la Memoria: An Exploration through Memory of ESMA**	May 3 5:00 pm	Presentation	**Ben W. Fallaw**
History	Suzanne Swartz ('07)	**Obstacles and Stepping Stones to the Hero's Pedestal: Reunified Germany's Selective Commemoration of Resisters to National Socialism**	May 3 4:00 pm	Presentation	**Raffael M. Scheck**
History	Alison McArdle ('07)	**Personal Politics: The Intersection of Federalism and Marriage**	May 4 4:00 pm	Presentation	**Elizabeth D. Leonard, Jason M. Opal**
Independent Studies	Christopher Zajchowski	**Themes of Belonging and Indentity in 'Diasporic' Indian**	May 2 2:30	Presentation	**Anindyo Roy**

	('07)	**Literature**	pm		
International Studies / Environmental Studies	Mariah Hudnut ('07)	**Meaningful Participation: the benefits of climate change policy to Brazil and prospects for the developing world**	May 2 3:30 pm	Presentation	**Patrice M. Franko**
International Studies / History	Katelyn Trionfetti ('07)	**The Criminalization of Sexual Violence and Wartime Rape Under International Humanitarian Law**	May 3 3:30 pm	Presentation	**Paul R. Josephson**
International Studies / Government	Daniela Andreevska ('09)	**The Role of Agriculture in Carapegua, Paraguay as a Factor for Achieving the Millennium Development Goals**	May 3 4:15 pm	Presentation	**Liliana Botcheva-Andonova**
International Studies / French/Italian	Leora Feldstein ('08)	**The Struggle of Urban Refugees in Yaoundé**	May 3 4:30 pm	Presentation	**Meadow Dibble-Dieng**
International Studies	Nancy McDermott ('08)	**Theory versus Reality of Agricultural Development: A Study of GICs and Aid Organizations in Ngound&#65533;r&#65533;, Cameroon**	May 3 4:45 pm	Presentation	**Meadow Dibble-Dieng**
International Studies	Ivica Petrikova ('07)	**TOO MANY BAD COOKS SPOILING THE BROTH? Analysis of the Effectiveness of NGO Work in Solving the Problem of Child Labor (field research conducted in El Salvador)**	May 3 3:00 pm	Presentation	**Ariel C. Armony, Paul R. Josephson**
Mathematics	Brianna Tufts ('07)	**Animation of Humans' Perception of Self Motion**		Poster	**Jan E. Holly**
Mathematics	Bridge Mellichamp ('07)	**Artificial Neural Network for Dynamical Motion**		Poster	**Jan E. Holly**
Mathematics	Arturs Vrublevskis ('07)	**Perceived Self-motion During Acceleration and Deceleration in a Centrifuge**		Poster	**Jan E. Holly**
Mathematics	Julian Jacobson ('10)	**The Physics of Perception in Tilt-Translation Models**	May 3 2:30 pm	Presentation	**Jan E. Holly**
Music	Avram David ('08)	**A Day in the Life: Beethoven's Influence on Modern Musical Thought**	May 4 2:15 pm	Presentation	**Steven E. Saunders**
Music	Ian London ('07)	**African-American Influences on Barbershop Harmony**	May 4 2:30 pm	Presentation	**Paul S. Machlin**

Music / English	Suzanne Merkelson ('09)	**The Contact Zone: Teaching and Learning in Rural India**	May 2 3:00 pm	Presentation	**Anindyo Roy, Steven R. Nuss**
Physics and Astronomy	Sarah Langley ('07)	**A Quantitative Trait Analysis of the LxS RI Panel**		Poster	**Murray F. Campbell**
Physics and Astronomy	Margaret Martei ('07)	**AN INJECTION-LOCKED DIODE LASER FOR COLD RYDBERG ATOM EXPERIMENTS**		Poster	**Duncan A. Tate**
Physics and Astronomy	Arturs Vrublevskis ('07)	**Constrained Hamiltonian Analysis of Vector Theories with Spontaneous Lorentz Violation**		Poster	**Robert T. Bluhm**
Physics and Astronomy	Yu-Hwei Chou ('07)	**High Magnetic Field Spectroscopy of Vibrational and Electronic Transitions in NTNB and Other Integer Spin Compounds.**	May 3 1:30 pm	Presentation	**Virginia C. Long**
Physics and Astronomy	Lent Johnson ('07)	**Planetary Nebulae in M82: Kinematic and Photometric Analysis**		Poster	**Murray F. Campbell**
Physics and Astronomy	Roy Wilson ('07)	**Temperature Control in Ultra Cold Plasmas**	May 3 2:00 pm	Presentation	**Duncan A. Tate**
Psychology	Monica Phillips ('07)	**Test Anxiety and Its Correlation with Poor Examination Performance**		Poster	**Tarja Raag**
Psychology	Paula Pelavin ('07)	**A Meeting of East and West: Can Eastern-Influenced Therapies be Used as a Treatment for Mood Disorders?**		Poster	**Ayanna Kim Thomas**
Psychology	Nina Gold ('09)	**Accepting Help When It Is Offered: An Investigation of Social Role Theory in College-Age Men and Women**		Poster	**Thane S. Pittman**
Psychology	Kaitlin Hanley ('07)	**Anhedonia and Depression: Anticipation, Consummatory, and Recall Deficits**	May 4 4:15 pm	Presentation	**Yulia Chentsova Dutton**
Psychology	Alexander Shafer ('07)	**Brain-Activation Comparison in Musicians vs. Non-Musicians**		Poster	**Michael J. Richardson**
Psychology	Alexandra Morrison ('07)	**Congruence of Embedded Study Question and Test Question Type and its Impact on Anxiety Levels and Reading**		Poster	**Ayanna Kim Thomas**

		Comprehension Test Performance			
Psychology	Kathryn Bartholomew ('07)	**Decreasing Cognitive Stress through Exposure to Natural Scenery**		Poster	**Michael J. Richardson**
Psychology	Marissa Meyer ('07)	**Developmental Timing of Exposure to an Enriched Environment in Rats**	May 4 3:30 pm	Presentation	**Jennifer R. Yates**
Psychology	Robert Zondervan ('07)	**Don't Supersize Me: A Comparison of Three Anti-Obesity Drugs Efficacy in Obese Zucker Rats**		Poster	**Jennifer R. Yates**
Psychology	Kaitlin Hanley ('07)	**Ego Depletion and Control Motivation in a Self-Presentational Context**		Poster	**Thane S. Pittman**
Psychology	Cheryl Hahn ('08)	**Gender Differences in the Effects of Social Context on Emotional Responding**		Poster	**Yulia Chentsova Dutton**
Psychology	Ira Panova ('07)	**Homeschooling: Is It Becoming Traditional Form of Education?**		Poster	**Tarja Raag**
Psychology	Kelly Brooks ('09)	**Implicit and Explicit Attitudes toward Female Appearance Standards**		Poster	**Martha Arterberry**
Psychology	Cheryl Hahn ('08)	**Lasting Lover or Fleeting Fling: The Effect of Desired Relationship Length on the Extent to which Others' Opinions Matter**		Poster	**Martha Arterberry**
Psychology	Natalie Ginsburg ('07)	**Levels of Processing of Paired Associates and Retroactive Interference**		Poster	**Ayanna Kim Thomas**
Psychology	Lana Ciociolo-Hinkell ('09)	**Mere Exposure & Dilution: Which has a greater influence over liking?**		Poster	**Thane S. Pittman**
Psychology	Katherine Lillehei ('07)	**Of Mouse and Man**	May 4 3:45 pm	Presentation	**Jennifer R. Yates, Yulia Chentsova Dutton**
Psychology	Lauren McClurg ('09)	**Power as a Threat**		Poster	**Rachel Kallen**
Psychology	Stacey Dubois ('08)	**Reducing Stereotype Threat Improves the Metamemorial Judgments of Older Adults on a DRM Task**		Poster	**Ayanna Kim Thomas**
		The Conflict in Female			

Psychology	Madison Gregor ('09)	**Athletes: Does Observer Gender and/or Athletic Orientation Affect Athletic Performance?**		Poster	**Rachel Kallen, Thane S. Pittman**
Psychology	Jessie Guild ('08)	**The Effect of Imagined Social Presence on Emotional Responding**		Poster	**Yulia Chentsova Dutton**
Psychology	Adrian Gilmore ('07)	**The Effects of Acute Testosterone Exposure on Aggression in Anolis carolinensis Lizards**	May 4 4:00 pm	Presentation	**Jennifer R. Yates**
Psychology	Charlotte Morse-Fortier ('08)	**The Effects of Regulatory Fit On Ego Depletion**		Poster	**Thane S. Pittman**
Psychology	Kristen Thatcher ('07)	**The Immunological Effects of Written Disclosure in Athletes**	May 4 3:15 pm	Presentation	**Jennifer R. Yates, Yulia Chentsova Dutton**
Psychology	Katherine Price ('07)	**The Impact of Post Event Information on Eyewitnesses**		Poster	**Ayanna Kim Thomas**
Psychology	Amy Reynolds ('09)	**The Influence of Gender and Facial Appearance on Voting Practices**		Poster	**Martha Arterberry**
Psychology	Caroline Voyles ('08)	**The Influence of Social Contexts on Gender Expression**		Poster	**Yulia Chentsova Dutton**
Psychology	Lindsay Carlson ('07)	**The Neurobiology of Addiction**		Poster	**Joseph E. Atkins**
Psychology	Margaret Hayes ('09)	**Would You Flirt to Get What You Want Out of a Man?: Women, Benevolent Sexism and Power Relations**		Poster	**Rachel Kallen**
Science, Technology, and Society	Thomas Reznick ('07)	**From the Fair to the Laboratory: Agricultural Science and Education in Aroostook, Maine.**	May 3 10:00 am	Presentation	**Paul R. Josephson**
Science, Technology, and Society	Brian Fulmer ('07)	**Political Biology: Peter Kropotkin and the Darwinian Revolution**	May 2 4:00 pm	Presentation	**Piers Hale**
Sociology	Jui Shrestha ('07)	**Seeking Modernity: The Growth of Shopping Centers in the city center of Kathmandu, Nepal**		Poster	**Thomas J. Morrione**
Theater and Dance / African Studies	Ajima Olaghere ('07)	**CHANGE THROUGH TRADITION IN THE WORK OF ZULU SOFOLA**	May 4 1:00 pm	Presentation	**Laura Chakravarty Box**
Theater and Dance / African	Roy Wilson	**Good and/or Evil: Osofisan and his Esu**	May 4 2:00	Presentation	**Laura Chakravarty**

Studies	('07)	**and the Vagabond Minstrels**	pm		**Box**
Theater and Dance	Annelene Fisher ('08)	**What Colour is Coloured? Expressions of Coloured Identity and Experience in South African Theatre**	May 4 1:30 pm	Presentation	**Laura Chakravarty Box**
Women, Gender, Sexuality	Allison Cole ('07)	**Chick Lit: Contemporary Popular Fiction & Consumerism**	May 3 2:00 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Phoebe Larkin ('08)	**Experiencing Trauma: A Personal Account and Analytical Study of How People Experience and Manage the Effects of Trauma**	May 3 2:30 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Amanda Vickerson ('07)	**Marriage as Represented Through the Lens of Reality Television**	May 3 3:15 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Carolyn Curtis ('08)	**Non-Participatory Poverty**	May 3 3:45 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Rebecca Flint ('07)	**The Body as a Medium: Iris Marion Young and Caroline Knap on Women's Body Experience in the United States Today**	May 3 2:15 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Katherine Price ('07)	**Why is Feminism a Bad Word?**	May 3 3:00 pm	Presentation	**Lisa Arellano**
Women, Gender, Sexuality	Adriana Nordin Manan ('07)	**Purchase and Set Her Free: Fair Trade as a Vehicle for Women's Empowerment**	May 3 2:45 pm	Presentation	**Lisa Arellano**