



A Celebration of Student Achievement • May 2, 2001 • Wellesley College

Conference Proceedings



The Ruhlman Conference

It gives us great pleasure to welcome you to the 2001 Ruhlman Conference. Made possible by the Barbara Peterson Ruhlman Fund for Interdisciplinary Study, the Ruhlman Conference is intended to foster collaboration among students and faculty across the disciplines and to enhance the intellectual life of the College. The event will provide an opportunity for students, faculty, staff, friends, family and alumnae to come together in celebration of student achievement.

The conference celebrates intellectual life by sponsoring a communal, public event where students will have an opportunity to present their work to an unusually wide audience. By providing an opportunity for public presentation of what is often a private, isolated activity, the conference will demonstrate that research can be part of the ongoing conversation in a community of scholars.

Attentive to the diversity of student interest and accomplishment, the Ruhlman Conference will include a variety of formats for the presentation of student work: papers, panels, posters, exhibitions, musical and theatrical performances and readings of original work. Representing the work of nearly 300 Wellesley students, the 2001 Ruhlman Conference is organized around ten major themes: The Arts; About Wellesley; Economic Issues; Gender and Sexuality; Multiculturalism and Diversity; Political Development; Analysis of Literature and the Arts; Science and Technology; Self and Identity; and Social Institutions and Processes. We encourage you to experience the diversity and richness of student achievement at the conference and wish to express our thanks and congratulations to all students participating in this special event.

The 2001 Ruhlman Committee

Bob Bossange
Director of Auxiliary Enterprises

William Cain
English Department

Julie Donnelly
Office of the Class Deans

Hannah Galvin
Class of 2001

Jennifer Gregory
Class of 2002

Daniel Johnson
Economics Department

Nora Hussey
Theatre Studies

Andrea Levitt
Office of the Dean of the College

Judy Mitchell
Office of the Dean of the College

Mary Pat Navins
Office of the Dean of the College

Mary Ucci
Director of the Child Study Center

Adele Wolfson
Chemistry Department



Thematic Overview

About Wellesley	Students and Alumnae: Here and Abroad (paper session)	9:30	Knapp PC Classroom
	Unique Inspiration (exhibition)	9:30	Jewett Sculpture Court
	Student-to-Student (panel)	11:00	Library Lecture Room
	Time and Change (panel)	1:30	Collins Cinema
	Women's Identity and Community: A Group Design Project (paper/exhibition)	1:30	Stone/Davis Living Room
	Work at Wellesley (panel)	3:00	Pendleton West 212
	Analysis of Literature and the Arts	Collaboration and Influence in Literature and Film (paper session)	9:30
Voices I (papers/readings)		9:30	Science Center 377
Literature and the Arts in China (paper session)		9:30	Pendleton West 212
Voices II (papers/readings)		11:00	Science Center 377
Analyses of Performance and Exhibition (paper session/performance)		11:00	Pendleton East 127
From Language Learning to Literary Analysis (paper session)		1:30	Pendleton East 339
Translation's Greatest Challenge (panel)		3:00	Pendleton West 220
Studies in Translation (paper session)		4:30	Pendleton East 239
Economic Issues	National Economic Development: Case Studies (paper session)	9:30	Pendleton East 339
	In the Balance (panel)	1:30	Science Center 277
	Crossing Borders (paper session)	4:30	Pendleton East 339
Gender and Sexuality	Literary Expressions of Gender Roles (paper session)	9:30	Science Center 278
	Point of View (exhibition)	9:30	Jewett Sculpture Court
	Gender in Educational Settings (paper session)	9:30	Pendleton East 139
	Asian Women: The Myth and the Reality (paper session)	11:00	Pendleton East 116
	Women at the Margins (paper session)	11:00	Pendleton East 139
	Coping to Survive Domination (paper session)	1:30	Pendleton East 116
	The Economics of Same-Sex Marriage (panel)	1:30	Pendleton East 139
	Living with Gender (poster session)	3:00	Jewett Lobby
	Gender in Cultural Context (paper session)	3:00	Pendleton East 139
Societal Structures and Their Effects on Gender Roles (paper session)	4:30	Founders 120	
Multiculturalism and Diversity	Learning Language through Immersion (panel)	1:30	Science Center 377
	Cultural Adaptations (paper session)	3:00	Pendleton East 116
	Analysis of Group Voting Decisions (panel)	4:30	Pendleton West 212
	A Summer Far Away (panel)	4:30	Science Center 278
Political Development	Mobilizing Voices (paper session)	9:30	Pendleton East 127
	New Perspectives on United States Political History (paper session)	11:00	Founders 120
	Peace Studies (panel)	1:30	Pendleton West 220
	Rhetoric, Propaganda and International Intervention (paper session)	3:00	Science Center 377
	Stories of Battles, Soldiers and Heroes (paper session)	4:30	Jewett 450



Science and Technology

New Approaches to Scientific Problems (paper session)	9:30	Pendleton East 116
Structure: Organismal, Molecular, Atomic (paper session)	11:00	Pendleton East 239
Immunological Innovation (panel)	1:30	Pendleton East 239
Innovations in Computer Technology (paper session)	1:30	Founders 120
Enzymes (poster session)	1:30	Jewett Lobby
Synthesis (poster session)	1:30	Jewett Lobby
Natural Cycles (poster session)	1:30	Jewett Lobby
Cells and Subcellular Components (poster session)	1:30	Jewett Lobby
Humans Influence the Environment and Vice Versa (paper session)	3:00	Pendleton East 339
Self-Referential Art (panel/exhibition)	3:00	Science Center Lobby
The Art and the Science of Multimedia (exhibition)	3:00	Science Center 277
Modern Mathematical Theory and Models (panel)	4:30	Pendleton East 129
Wild and Mutant Strains (panel)	4:30	Science Center 277
The Real World Meets the Internet (paper session)	4:30	Pendleton East 116

Self and Identity

A Woman's Voice: Authenticity vs. Role-Playing (paper session)	11:00	Pendleton East 339
Adult Psychological Processes (paper session)	11:00	Pendleton West 212
Storytelling Transformed (panel)	11:00	Collins Cinema
Psycho-Social Perceptions (poster session)	1:30	Jewett Lobby
What's in It for Me? Education, Motivation and Reward (paper session)	1:30	Pendleton East 127

Social Institutions and Processes

New Images of the Corporate World (paper session)	11:00	Science Center 278
The Results of Education (paper session)	1:30	Pendleton West 212
The World of the Child (paper session)	1:30	Science Center 278
The Right to Choose: School Vouchers (paper session)	3:00	Pendleton East 239
New Media and Social Change (paper session/film)	3:00	Science Center 278
Aspects of Academe, Literature and the Arts (poster session)	3:00	Jewett Lobby

The Arts

Contemporary Music (papers/performance)	9:30	Jewett Auditorium
ART 322 Advanced Printmaking (exhibition)	9:30	Jewett-Pendleton Bridge
A Bridge between the Classical and the Romantic (performance)	11:00	Pendleton West 220
SITEworks Studio Art (exhibition)	11:00	Jewett 372
Music from the Nineteenth Century (performance)	11:00	Jewett Auditorium
Visions of Self (exhibition)	1:30	Jewett Lobby
Wellesley College Theatre Presents (performance)	1:30	Jewett Auditorium
Studio Honors (exhibition)	1:30	Jewett Gallery
A Limited Edition (exhibition)	3:00	Clapp Book Arts Lab
A Celebration of Twentieth-Century Music (performance)	3:00	Jewett Auditorium
Prism Jazz (performance)	4:30	Jewett Auditorium

Conference Schedule

8:30 – 9:30 Continental Breakfast

Continental breakfast served in Jewett Lobby, Pendleton Atrium and Science Center Lounge.

9:30 – 10:40

About Wellesley

Students and Alumnae: Here and Abroad (paper session) *Knapp PC Classroom*

Diana Cassie, “An Application of John Holland’s Theory of Vocational Choice to Achievement, School Satisfaction and Satisfaction within a Major at Wellesley College”

Rachel Mann, “Wellesley Women in Israel: Issues of Identity in Religious, Historical and Sociological Perspectives”

Jessica Goldstein, “Taking a Deep Breath: Living and Learning from Life, Away from Wellesley and Outside of the Classroom”

Unique Inspiration (exhibition) *Jewett Sculpture Court*

Danielle Norris, “Dances with Sea Cucumbers of the Polyp Persuasion: Artwork Inspired by Coral Reefs”

Analysis of Literature and the Arts

Collaboration and Influence in Literature and Film (paper session) *Pendleton East 239*

Nicole Barraza, “Chains of Liberty: The Scrutiny of Reality and Imagination in the Films of Luis Buñuel and Pedro Almodóvar”

Elisabeth M. Hamilton, “Art and Allegory: An Examination of Shakespeare’s Influence on the Work and Life of John Keats”

Caroline Hellman, “‘Fog Warning’: Winslow Homer’s Confrontation of Nature”

Lorry Perry, “Invoking Cabell: Name-Dropping in the 1920s”

Voices I (papers/readings) *Science Center 377*

Karyn Y. Lu and Katharine R. S. Freeman, “Crossing the Harvard Bridge: A Collection of Personal Essays”

Literature and the Arts in China (paper session) *Pendleton West 212*

Lydia Chan, “Redefining the Memoir: A Comparative Analysis of Narratives from the Cultural Revolution”

Kristen Looney, “Chinese Proverbs – One Student’s Independent Study Experience”

Peggy Wang, “Contemporary Hong Kong Art and Cultural Identity”

Economic Issues

National Economic Development: Case Studies (paper session) *Pendleton East 339*

Susan Nazzaro, “A History of World Bank Involvement in the Democratic Republic of the Congo since Independence”

Rosa M. Perez, “The Great Depression and the Search for a New Order in Japan and the United States”

Gender and Sexuality

Literary Expressions of Gender Roles (paper session) *Science Center 278*

S. Serena Hui, “d-EVE-fense: Critical Interpretations of Milton’s Eve”

Catherine L. Ware, “‘She’s Good Meat with Lots of Flavor’: Marriage Negotiations in Renaissance Florence according to Alessandra Strozzi”



Seemi Syed, "The Importance of Being Earnest: The Unapologetic Individuality of a Girl Facing the Societal Flux of Zimbabwe's Independence in Tsitsi Dangarembga's *Nervous Conditions*"

Anne W. Hennessy, "*Ave Eva*: Selected Poems by Hildegard of Bingen"

Point of View (exhibition) *Jewett Sculpture Court*

Katrina Spicer, Meghann McCrory and Keif Schleifer, "Point of View"

Gender in Educational Settings (paper session) *Pendleton East 139*

Janise Kim, "School-Aged Girls' Perceptions of Father Involvement and Academic Achievement"

Sarita Kishore, "Gender as a Status Characteristic among Preschool Children"

Jenny Ly, "Friendship Similarity among College Women: An Ecological Perspective"

Political Development

Mobilizing Voices (paper session) *Pendleton East 127*

Lucy N. Heenan, "A Regionalist Assessment of Why Women in the West of the United States Gained the Right to Vote before Women in Other Regions of the United States"

Jessica Fawn Koch, "What Are the Options? Factionalism and Economic Development on Fort Peck Indian Reservation"

Franchesca Herrera, "Awakening the Sleeping Giant: Mobilization of Latino Voters in California"

Michelle Lapointe, "The President in Cowboy Boots: Vicente Fox and the Mexican Election of 2000"

Science and Technology

New Approaches to Scientific Problems (paper session) *Pendleton East 116*

Gretchen Campbell, "Construction and Calibration of Optical Tweezers at Wellesley"

Allison Desiree Dupuy, "Three-Dimensional Manipulation of Microscopic Objects by Optical Tweezers and Laser Scalpel"

Elaine Ulrich, "Laser Cooling and Trapping of Atomic Rubidium"

The Arts

Contemporary Music (papers/performance) *Jewett Auditorium*

Mandy Wong and Alexandra R. Swartzel, "New Music at Wellesley: Student Compositions in the Twenty-First Century"

Art 322 Advanced Printmaking (exhibition) *Jewett-Pendleton Bridge*

10:40 – 11:00 Break

Continental breakfast served in Jewett Lobby, Pendleton Atrium and Science Center Lounge.

11:00 – 12:10

About Wellesley

Student-to-Student (panel) *Library Lecture Room*

Morgan Adams, Emily Carr, Laura Feldman, Laura Flahive, Martina Koeva, Sudha Krishnan, Tara Ramanathan and Lara Zaroulis, "Peer Tutoring at Wellesley: An Inside Look"

Analysis of Literature and the Arts

Voices II (papers/readings) *Science Center 377*

Caitlin Blaser, Emily Flitter, (Arden) Elizabeth Hill, Lindsay Ryan and Lacey Feldman, "Group Writing"

Analyses of Performance and Exhibition (paper session/performance) *Pendleton East 127*

Moriah Evans, "Doubly Contextual - The Use of Photography in the Display of African Art: A Comparison of Two Recent Exhibitions"

Laura Thornton, "An Architecture of Music: The *St. Matthew Passion* of J. S. Bach"

Megan C. Adair, "The Big Time in a Small Town: The First Ten Years of Blockbuster Era Cinema (1975-1984) in Randolph, Vermont"

Gender and Sexuality**Asian Women: The Myth and the Reality (paper session)** *Pendleton East 116*

Pamela Pontius, "The Women of Murakami Haruki"

Helen White, "Images of Women of the Tang Dynasty through Poetry and Literature: Exciting Women in Exciting Times"

Women at the Margins (paper session) *Pendleton East 139*

Elaine Fitzgerald, "Motherhood among Women at the Margins"

Maria Xirinachs, "The History of the Terraba Indigenous Women of Costa Rica"

Cortney L. Harding, "Oral Histories on Women's Reproduction"

Political Development**New Perspectives on United States Political History (paper session)** *Founders 120*

Amanda K. Rudman, "The American Dream in the Antebellum South"

Alexandra R. Swartzel, "Reinterpreting America: Freedom, Obligation and the Democratic Ideal in the Political Theory of Franklin Delano Roosevelt"

Science and Technology**Structure: Organismal, Molecular, Atomic (paper session)** *Pendleton East 239*

Amanda L. Mifflin, "Emission Spectroscopy as a Probe of Cooperative Electronic Interactions in Transition Metal Complexes"

Avani Patel, "Synthesis and Structural Analysis of a Thiopeptide"

Stephanie Anne Schur, "The Evolution of Postcranial Morphology in Delphinoidea"

Self and Identity**A Woman's Voice: Authenticity vs. Role-Playing (paper session)** *Pendleton East 339*

Amy L. Gower, "The Impostor Phenomenon and Level of Voice: Gender Differences in Distress over Inauthenticity"

(Arden) Elizabeth Hill, "Original Poetry by Arden Hill"

Margaret Samu, "The Sculpture of Evelyn Beatrice Longman"

Adult Psychological Processes (paper session) *Pendleton West 212*

Theresa E. DiDonato, "Interpersonal Distance: How Situational Variables and Age Influence Inferred Interpersonal Relationships"

Amanda Knowles, "A Study of Underlying Cognitive Mechanisms in Implicit Memory"

Helen MacDonald, "Life Course Implications of Adolescent Emotional Instability"

Shannon M. Smith, "The Self, Close Relationships and Depression"

Storytelling Transformed (panel) *Collins Cinema*

Hye-Hyun An, Kara L. Blanchard, Diana H. Fong and Sheila A. Vyas, "Redefining the Narrative"

Social Institutions and Processes**New Images of the Corporate World (paper session)** *Science Center 278*

Jessica Chan, "Controversy in Advertising: An Analysis of the Nike Campaign"

Jessica E. Dunsmore, "The Bottom Line: A Look at Community Service and Volunteerism on One Firm's Recruitment and Retention"

The Arts

A Bridge between the Classical and the Romantic (performance) *Pendleton West 220*

Margi Chan, Emily Filpi and Tyler Wellensiek, "Performance of Franz Schubert's *Shepherd on the Rock* (Op. 129) for Voice, Clarinet and Piano"

SITEworks Studio Art (exhibition) *Jewett 372*

Tuyet Nguyen, Devon C. Miller, Katherine J. Megquier, Nirali A. Patel, Israela I. Vera, Hilary C. Fry, Elizabeth Elder-Groebe, Alyssa A. Tang, Sue-Jin Lee and Kaetlyn Ann Wilcox, "ABSENT: A SITEworks Installation in the Jewett Student Gallery"

Music from the Nineteenth Century (performance) *Jewett Auditorium*

Bronwen E. Bromberger, Margaret Brisch, Lauren Taigue, Jane Park, Jessica Andrade, Mandy Wong and Deborah A. Hayden, "Beethoven and Brahms: Chamber Music from the Nineteenth Century"

12:10 – 1:30 Lunch

All members of the Wellesley College community are invited to have lunch on Severance Green. (In the event of rain, lunch will be served in the residence halls.)

1:30 – 2:40

About Wellesley

Time and Change (panel) *Collins Cinema*

CaraMae Cirignano, Carolyn A. Schultz, Jess Charlap, Kathryn E. O'Rourke, Sarah J. Hull and Keif Schleifer, "Living with Legacy: The Architectural Past, Present and Future of Wellesley College"

Women's Identity and Community:

A Group Design Project (paper/exhibition) *Stone/Davis Living Room*

Ingrid Chen, Caitlin Conboy, Merritt Evans, Susan Elliott, Aimee Kim, Margo Lindauer, Kathryn Lyslo, Elizabeth Minor, Rebecca Pfaff, Rachel Ropeik, Sarah Schoenbach and Selena Tang, "Stone-Davis Mural Project"

Analysis of Literature and the Arts

From Language Learning to Literary Analysis (paper session) *Pendleton East 339*

Chia-Yin Tu, "It's All Greek to Us"

Dawne Helena Thorne, "The Dichotomous Nature of the Furies in Aeschylus' *Eumenides*"

Elizabeth Johnson, "Herodotus' Adaptation of Dramatic Technique in Describing Key Deaths in *The History*"

Economic Issues

In the Balance (panel) *Science Center 277*

Amanda Annese, Gail Kan, Claire Levy, Caroline McGregor, Mae Podesta, Andrea Saavedra and Miriam Schiffer, "Weighing International Free Trade against Domestic Protection"

Gender and Sexuality

Coping to Survive Domination (paper session) *Pendleton East 116*

Jill Brewer, "Rape as a Tool in Genocide: The Case of Bosnia-Herzegovina"

Yeena Yoon, "The Cognitive Coping Strategies of Battered Korean Immigrant Women"

Lena Zwarenstein, "Context of Violence: Domestic Violence and Gender Roles in Japan"

The Economics of Same-Sex Marriage (panel) *Pendleton East 139*

Roya Zahra Rastegar and Anna Strassmann Mueller, "The Same-Sex Marriage Debate: A Cost-Benefit Analysis"

Multiculturalism and Diversity**Learning Language through Immersion (panel)** *Science Center 377*

Helen White, Emily Yu, Tanya Limugsorn, Lyle Pannell, Melinda Hwang, Lena Lo, Fawn G. Cheng, Fiona Ip, Natalie Ng, Charlene Wang and Sylvie Wald, "Living and Learning in China (from the Wellesley Classroom to Beijing)"

Political Development**Peace Studies (panel)** *Pendleton West 220*

April Kuehnhoff, Theresa Tribble, Ellen Joe, Sophia Dien, Mabel Tso, Michelle Moy, Erica Hansen, Heather Miller and Sunita Palekar, "Wintersession in India: Grassroots Development, Conflict Resolution and the Gandhian Legacy in India"

Science and Technology**Immunological Innovation (panel)** *Pendleton East 239*

Marta A. White, Avani Patel, Tara Ramanathan, Bronwen E. Bromberger, Melissa de la Rama and Sonya Panella, "New Frontiers in Immunological-Based Treatment"

Innovations in Computer Technology (paper session) *Founders 120*

Kirsten Chevalier, "Exploring the Type Inference Approach to Deforestation"

Jennifer V. Warren and Amy W. Wong, "Artificial Intelligence and Game Playing"

Enzymes (poster session) *Jewett Lobby*

Melissa Sharky and Heather Kettenis, "Involvement of Surface Cysteines in Formation of Multimers and Inactivation of Endopeptidase EC 3.4.24.15"

Carrie A. Readal, "Asthma and Adenosine Deaminase Enzyme Therapy: Avenues for Administration"

Shelly Walsh and Heather Kettenis, "The Role of Metal Ions in Enhancing the Activity of EC 3.4.24.15"

Synthesis (poster session) *Jewett Lobby*

Stephanie A. Chan, "Selective Ribosidation of 1,2,4-triazole"

Megan Chen, "Solution Interactions of 1,2,4-triazolium Ions with Nucleophilic Counter Ions"

Amanda Doran, "Carbon-Carbon Bond Formation through N1 Substituted and Lithiated Triazole Intermediates"

Marianne Simone Terrot, "Synthesis and Study of a New Class of Antitubercular Agents"

Natural Cycles (poster session) *Jewett Lobby*

Valerie Antoine, "Evergreen but Never the Same: An Analysis of Seasonal Protein Changes in the Leaves of *Rhododendron maximum*"

Amy Mellgren, "Why Do Women Complain about Cold Hands?"

Gabriela J. Reubins, "Why Can't I Fall Asleep When My Hands and Feet Are Cold?"

Leslie Ann Bagay, "The Circadian Rhythm of Neurogenesis in Juvenile Lobster Brains"

Cells and Subcellular Components (poster session) *Jewett Lobby*

Margi Chan, "The Effects of Oxidative Stress Induced by Excess Light on Thylakoid Membrane Proteins in *Arabidopsis thaliana*"

Jeanne Hsu, "Restriction Enzyme-Mediated Integration in *Yarrowia lipolytica*"

Valerie Wong, "Expression of the F-actin Binding Protein ZABP2 in *Escherichia coli*"

Lesley Wood, "Isolation and Identification of a Mutant Strain of *Yarrowia lipolytica*"

Self and Identity**Psycho-Social Perceptions (poster session)** *Jewett Lobby*

Amy L. Ashbridge, "Atwood's Creative Protagonists: Survival through Personal Expression"

Charlotte Boutz, June Lau and Rebecca Lam, "Corporate Attire, Corporate Culture and Perceptions of Job Candidates: A Social Psychology Experiment"

Lin Yee Chan, Toshie Imada and Kristina Lawyer, "Social Perception of Internet Users and Lonely People"

Lauren Dennis and Raceel Jarudi, "The Effects of Shyness on Daydreaming Frequency and Content"

What's in It for Me? Education, Motivation and Reward (paper session) *Pendleton East 127*

Marie Giancarlo, "Immunizing Preschool Children against the Negative Effects of Reward on Creativity and Motivation"

Vanessa L. Greene, "Immunizing College Students against the Negative Effects of Extrinsic Constraints"

Dena Citron, "Modernity, Social Inequality and Revenge"

Social Institutions and Processes**The Results of Education (paper session)** *Pendleton West 212*

Jane A. Gwira, "Choices in the Brain Drain: Interviews with African Health Care Professionals about Their Migration to the West"

Sarah Karim, "Can Religious Schools Address the Crisis of Education in Pakistan?"

The World of the Child (paper session) *Science Center 278*

Lisa M. Hohmann, "Preschool Friendships: Distinctions among Reciprocal, Unilateral and Imaginary Friends"

Abigail McDonald, "A Comparison of Hausa Adult- and Child-Directed Speech"

Samantha Roberts, "Picturing Harry Potter: The Effect of Story Illustrations on Children's Imagery"

The Arts**Visions of Self (exhibition)** *Jewett Lobby*

Alison W. Chang, "Redefining the Self-Portrait"

Wellesley College Theatre Presents (performance) *Jewett Auditorium*

Elizabeth A. Hedstrom, Denise Crooks, Elizabeth A. Wightman, Jenny Caplan, Alexandra R. Swartsel, Robin Olinsky, Christine Valeo and Erika L. Reinfeld, "Striding Forward, Looking Back: A Theatrical Retrospective"

Studio Honors (exhibition) *Jewett Gallery*

Rachelle Dang, "Memory and Body"

Erica Goetz, "Flush"

Kaetlyn Ann Wilcox, "Painted Journeys"

Mie Yoshinaga, "The Weight of Time"

2:40 – 3:00 Break

Refreshments served in Jewett Lobby, Pendleton Atrium and Science Center Lounge.

3:00 – 4:10

About Wellesley**Work at Wellesley (panel)** *Pendleton West 212*

Marseille Allen, Ashleigh Arledge, Katherine Brouhard, Laura Feldman, Iris Flannery, Stacey Knapp and Alessa Podolak, "The Organization and Meaning of Work at Wellesley: Field and Survey Studies of Workers and Work Groups"

Analysis of Literature and the Arts**Translation's Greatest Challenge (panel)** *Pendleton West 220*

Colleen C. Murphy, Katharine R. S. Freeman, Claire Shinkman and Barbara T. Skarica, "Between Languages: Issues of Translation in Poetry"

Gender and Sexuality**Living with Gender (poster session)** *Jewett Lobby*

Vivian S. Chang, Sheila M. McCabe and Brooke L. Rogers, "Was That a Pick-up Line?: The Effect of Mode of Dress and Type of Comment on Perceptions of Flirtation among College Students"

Mary Ellen Evans and Sarah Cully Mueller, "Gender Differences in Preschoolers' Exercise Play: Activity Preference and Maternal Influence"

Kristen Fay, Christina Lau, Allison Price and Meg Steiner, "Impression Formation Based on Social Radiation Effects in Romantic Relationships"

Jennie Seeg, "The Wendy Factor"

Gender in Cultural Context (paper session) *Pendleton East 139*

Regan Bernhard, "Picking Teams: Sex Role Conflict in Female Athletes"

Lara Zaroulis, "The Role, Constructs and Effects of Black Humor in *American Psycho* (novel and film)"

Multiculturalism and Diversity**Cultural Adaptations (paper session)** *Pendleton East 116*

Karlo Ng, "Asian American Achievement Differences: A Look at Four Subgroups"

Kathryn E. O'Rourke, "Dead Space to Community Place: The Lessons of Two Vernacular Architecture Projects in Houston and New York"

Mariah Levin, "Assimilation vs. Integration: Conflicting Goals for North African Muslims in France"

Stephanie Morales, "From the Child's Point of View: The Relationship between Family Culture and Academics for Hispanic and White Children"

Political Development**Rhetoric, Propaganda and International Intervention (paper session)** *Science Center 377*

Charlotte Boutz and Charlotte Cooper, "Examining Western Apologists for Soviet Communism"

Amy Thayer, "Refugee and International Relations: The Case of Algerian Refugees during the Algerian War for Independence"

Charlene Wang, "The Rhetoric of Indifference in International Intervention"

Science and Technology**Humans Influence the Environment and Vice Versa (paper session)** *Pendleton East 339*

Elizabeth Eideann Ferrenz, "Determining the Human Source of the Most Potent Greenhouse Gas: SF₅CF₃"

Adena Greenbaum, "Long-Term Fate of Heavy Metals in Sediments of a Massachusetts Salt Marsh"

Self-Referential Art (panel/exhibition) *Science Center Lobby*

Larissa J. Ranbom, Amy L. Ashbridge, Emily A. Braunstein, Kirsten Chevalier, Alexandra Dunne-Bryant, Leslie E. Gibson, Jennifer L. L. Hanson, Elizabeth A. Murphy, Kathryn A. Odiorne, Sheree M. Schrager, Marianne Simone Terrot, Carla J. Weiss and Emily R. Wilson, "Versailles 2001: Interactive Photokinetic Sculpture for the New Millennium"

The Art and the Science of Multimedia (exhibition) *Science Center 277*

Karen K. Liu and Ena Kim, "Journey to the Sun"

Karyn Y. Lu and Lin Hsu, "Mind Benders"

Jee-Hee Yoon and Tuyet Nguyen, "Imaginations"

Cassandra Hamilton and Natalie Ng, "Shaken and Stirred"

Weili Zhang and Chien-Na (Tina) Wong, "East Meets Space"

Erin Stadler and Jess Charlap, "Sand of the Hourglass"

Erika O. Symmonds and Anna Haas-Barluschke, "*Peter and the Wolf*"

Julie Weber and Shadia Malik, "Dining Dynamics"

Social Institutions and Processes

The Right to Choose: School Vouchers (paper session) *Pendleton East 239*

Ella Gao, "The Politics of School Choice: The Unusual Coalitions of the Voucher Movement"

Laura L. Hochla, "Does the Inclusion of Special Education Students in Regular Classrooms Affect the Performance of Nonspecial Education Students?"

Katie Mozer, "The Political Prospects for Charter School Reform"

New Media and Social Change (paper session/film) *Science Center 278*

Marsha Botros, "Social Theories of Modernity and the Rise of Visual Culture"

Nicole Sanderson, "Voices against Violence"

Angela Tarango, "Pat Robertson: Challenge and Controversy – Christian Fundamentalism and Politics in the United States"

Leila Toplic, "Holocaust Denial on the Internet"

Aspects of Academe, Literature and the Arts (poster session) *Jewett Lobby*

Morgan Russell, "The Economics of the Performing Arts"

Jennifer Wilking, "Explaining Human Rights Discourse in the Social Sciences: The Cases of Sociology, Anthropology and Political Science"

Margaret Barao, "Children's Literature in the United States, 1750-2000"

The Arts

A Limited Edition (exhibition) *Clapp Books Arts Lab*

Anne W. Hennessy and Amanda M. Zoellner, "*Never Done*: A Collaborative Book on the Theme of Women's Work"

A Celebration of Twentieth-Century Music (performance) *Jewett Auditorium*

Emily Filpi, Sarah J. Gilbert, Deborah A. Hayden, Anna Nousek, Isabelle Plaster, Karen Sauer, Tyler Wellensiek and Nita Vivatrat, "A Break With Tradition: A Celebration of Twentieth-Century Music! *Sextet for Piano and Winds*, by Francis Poulenc; Selections from *Songs to American Poetry*, by Ned Rorem and Other Compositions"

4:10 – 4:30 Break

Refreshments and hors d'oeuvres served in Jewett Lobby, Pendleton Atrium and Science Center Lounge.

4:30 – 5:40

Analysis of Literature and the Arts

Studies in Translation (paper session) *Pendleton East 239*

Minh-Han Pham, "Remolding Russian Poetry: Problems of Poetic Translation and Some Solutions"

Andrea Saavedra, "*A Few Words in the Mother Tongue* (Mame Loshn): Language Lessons in the Work of Yiddish American Poet Irena Klepfisz"

Claire Shinkman, "A Crisis of Responsibility: Translating Jean-Paul Sartre's *Les Mouches* for the Theater"

Economic Issues

Crossing Borders (paper session) *Pendleton East 339*

Christine Boyoung Kim, "Chicken-and-Egg: Trade and Technological Change?"

Rachel Stern, "Asian Air Pollution: Class and Conflict"

Wallis Wilkinson, "Missing Women"

- Gender and Sexuality** **Societal Structures and Their Effects on Gender Roles (paper session)** *Founders 120*
 Rebecca Gordan, "Pornography and Fantasy Construction in Modern Russia"
 Michael Jo Mandulak, "Feminist Philosophy of the Military: The Function of Gender in the U.S. Army"
 Antonia Young, "Four Weddings and a Funeral: Marriage and Death in Antiquity"
- Multiculturalism and Diversity** **Analysis of Group Voting Decisions (panel)** *Pendleton West 212*
 Ilana Avital, Helena Hwang, Katherine Klabau, Heather Miller, Danielle Solomon, Brynne Speizer, Meagan Sway, Carissa Wyant and Melissa de la Rama, "Election 2000: Did Anti-Semitism Play a Role in Responses to Lieberman's Nomination?"
A Summer Far Away (panel) *Science Center 278*
 Belinda Dela Cruz, Deth Sao, Paige Krause, Claire Levy, Winnie Tam, Lin Yee Chan and Kristen Looney, "Internships in Asia: Intercultural Experiences in Life"
- Political Development** **Stories of Battles, Soldiers and Heroes (paper session)** *Jewett 450*
 Kimberlee A. Williamson, "The Plight of the Defeated: Victory as Tragedy in Aeschylus' *The Persians*"
 Elizabeth A. Hedstrom, "The Deification of the Leaders of World War II"
- Science and Technology** **Modern Mathematical Theory and Models (panel)** *Pendleton East 129*
 Pip Huang and Sheree M. Schrager, "Death to the Parallel Postulate: Why High School Geometry Just Isn't Good Enough"
 Maggie Waung and Erika O. Symmonds, "Road Rules: Traffic Jams – Bad Luck or Fact of Life?"
 Erika O. Symmonds and Maggie Waung, "Spin Up, Spin Down: Phase Transition Modeling through Computer Simulation"
Wild and Mutant Strains (panel) *Science Center 277*
 Marisol Arguelles and Estelle Lin, "Quantitative Measurement of Cyanophycin Using Proton NMR Spectroscopy"
 Salima Shaikh, "¹H NMR Spectroscopic Studies of the Synthesis of Cyanophycin by Nitrogen-Starved Cyanobacteria after Incubation with ¹⁵NH₄Cl"
 Maliha Farooq, "Cyanophycin Formation after Chloramphenicol Treatment"
 Dana J. Huebert, Kristen M. Blanton and Michelle Iniguez, "Proteolytic Enzymes Induced in Cyanobacteria in Response to Stress"
 Jean Huang and Margarita Torres, "Acid Tolerance in the Cyanobacterium *Synechocystis* sp. Strain PCC 6308"
 Joy Tanaka and Katherine Shea, "Determining an Alternate Source of Nitrogen in Growth Media for *Synechocystis* sp. PCC 6308 and Influences of pH on the Media"
 Jane A. Gwira, "Purification of an Enzyme from Cyanobacteria Involved in Nitrogen Metabolism"
The Real World Meets the Internet (paper session) *Pendleton East 116*
 Leah Graham, "Of Course It's True; I Saw It on the Internet!"
 Silvia Alina Tomai, "Creating a Web Site for Special Education and Information Technology"
 Rachel Lomasky, "TextRadio"
- The Arts** **Prism Jazz (performance)** *Jewett Auditorium*
 Meg Niman, Nalyn Siripong, Mandy Wong, Dena Citron, Beverly Luther, Jessica Lee, Jennifer Gordon, Caitlin Blaser and Morgan Russell, "Exploration through Jazz Performance"



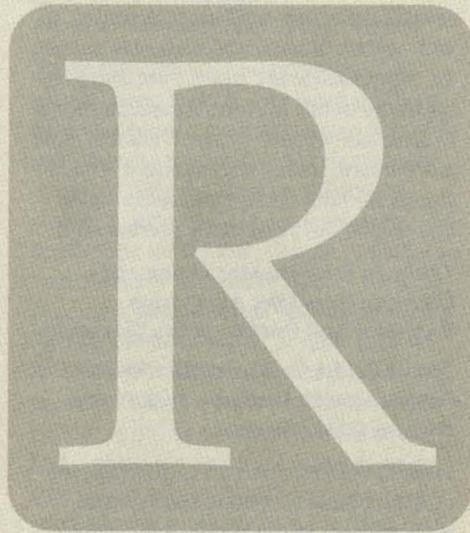
Conference Planner

Time	Presentation 1	Presentation 2	Presentation 3	Presentation 4
9:30 – 10:40	Topic:	Topic:	Topic:	Topic:
	Presenter(s):	Presenter(s):	Presenter(s):	Presenter(s):
	Location:	Location:	Location:	Location:
10:40 – 11:00	B R E A K			
11:00 – 12:10	Topic:	Topic:	Topic:	Topic:
	Presenter(s):	Presenter(s):	Presenter(s):	Presenter(s):
	Location:	Location:	Location:	Location:
12:10 – 1:30	L U N C H			
1:30 – 2:40	Topic:	Topic:	Topic:	Topic:
	Presenter(s):	Presenter(s):	Presenter(s):	Presenter(s):
	Location:	Location:	Location:	Location:
2:40 – 3:00	B R E A K			
3:00 – 4:10	Topic:	Topic:	Topic:	Topic:
	Presenter(s):	Presenter(s):	Presenter(s):	Presenter(s):
	Location:	Location:	Location:	Location:
4:10 – 4:30	B R E A K			
4:30 – 5:40	Topic:	Topic:	Topic:	Topic:
	Presenter(s):	Presenter(s):	Presenter(s):	Presenter(s):
	Location:	Location:	Location:	Location:



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Abstracts

9:30 -10:40

About Wellesley**Students and Alumnae: Here and Abroad (paper session)****An Application of John Holland's Theory of Vocational Choice to Achievement, School Satisfaction and Satisfaction within a Major at Wellesley College***Diana Cassie '01, Psychology*ADVISOR: *Julie K. Norem, Psychology*

This study examined the relationship between academic performance and satisfaction and congruence of major with test-ed career interests. Seventy-six Wellesley students completed questionnaires measuring the above constructs. Participants' career interests were measured by John Holland's Self-Directed Search which classifies individuals according to typologies of vocational choice. He asserts that members of a vocation have similar personalities and respond to many situations and problems in similar fashion, creating what he labels a characteristic interpersonal environment. The major assumption of his theory is that vocational satisfaction, stability and achievement depend on the extent to which the individual's personality and work environment are congruent. There was a moderate positive correlation between congruence and satisfaction at Wellesley ($r(54) = 0.38, p < 0.01$). Participants with high congruence showed higher degree of satisfaction at Wellesley and in their majors than did those who exhibited less congruence.

Wellesley Women in Israel: Issues of Identity in Religious, Historical and Sociological Perspectives*Rachel Mann '01, Middle Eastern Studies*ADVISOR: *Barbara Geller, Religion*

My thesis is a study of the approximately 20 Wellesley alumnae who have made Aliyah, immigration to Israel, over the past 30-40 years. I had the opportunity to interview them on a recent trip to Israel. The questions I posed related to their multifaceted identities. I asked them to discuss the evolution of their Zionist, Jewish or non-

Jewish, American and Israeli identities, as well as their identities as Wellesley women. To contextualize my study, I am also looking at the trends in North American Aliyah to ascertain whether or not Wellesley alumnae conform to this larger pattern. Their stories are both diverse and remarkable, and will be the focus of my presentation.

Taking a Deep Breath: Living and Learning from Life, Away from Wellesley and Outside of the Classroom*Jessica Goldstein '01, Political Science*ADVISOR: *Jerold Auerbach, History and Barbara Geller, Religion*

From the lowest point on earth or the top of Mount Sinai to routine bomb scares, each moment in the Middle East offers occasions to stop, take a deep breath and consider your environment. I took a year "off" from school to volunteer in Israel. The decision to leave school for a whole year was natural for me, but the experience was anything but what I had expected.

Socially and emotionally, I was on my own to learn the language, the bus schedules and the norms of the culture. I easily concluded that a seminar about immigration does not tell the story that is told by the face of an eight-year-old girl seeing a refrigerator for the first time or the marginalization that socializes 15-year-old immigrants to delinquency. After encountering such realities and then returning to the culture that I grew up with, now is the time to consider the lessons learned in the world, not in the classroom.

Unique Inspiration (exhibition)**Dances with Sea Cucumbers of the Polyp Persuasion: Artwork Inspired by Coral Reefs***Danielle Norris '02, Studio Art and Biology*ADVISOR: *Marianne Moore, Biology and Sarah Slavick, Studio Art*

My obsession with sea creatures began at an early age while watching Sunday morning PBS nature programs in my PJ's. I dreamt of becoming a silvery, rainbow colored fish sharing coral crevices with

tiny crustaceans. I decided I could settle for being Jacques Cousteau. But living in rural Minnesota surrounded by corn and soybean fields, I knew that these were unlikely possibilities. This Wintersession, I came closer to fulfilling my aspirations when I traveled to Glovers Reef Atoll in Belize with the tropical ecology class. The magical moments I spent snorkeling over turtle grass beds and swimming amongst schools of blue tang fish were the inspiration for this artwork dedicated to all the *zooxanthellae* on the reef.

Analysis of Literature and the Arts**Collaboration and Influence in Literature and Film (paper session)****Chains of Liberty: The Scrutiny of Reality and Imagination in the films of Luis Buñuel and Pedro Almodóvar***Nicole Barraza '01, Political Science and Spanish*ADVISOR: *Elena Gascón-Vera, Spanish and Joy Renjilian-Burgy, Spanish*

Luis Buñuel and Pedro Almodóvar are among the most controversial Spanish movie directors of their generations. Fifty years stand between each director's first movie, *Un chien andalou* (1928) and *Pepi, Luci, Bom, y otras chicas del montón* (1978); yet, they share a quest in the search for liberty and new aesthetic and intellectual frontiers. Buñuel made his films in the first two decades of the twentieth century, while Almodóvar has created his in the last two decades of the last millennium. Due to the character and thematic content of their films, it is inevitable to compare these prolific directors. Both are independent filmmakers, whose creations remain outside of the mainstream and noncommercial. Despite their marginalization, they have obtained worldwide recognition and success. Each has won numerous film awards, including Oscars for Best Foreign Film. (Research supported by a Schiff Fellowship.)

Art and Allegory: An Examination of Shakespeare's Influence on the Work and Life of John Keats

Elisabeth M. Hamilton '01, *English*
 ADVISOR: Alison Hickey, *English* and
 Timothy Peltason, *English*

John Keats says of Shakespeare that he “led a life of Allegory; his works are the comments on it.” Although his meaning is obscure, Keats is clearly interested in the mysterious relationship between Shakespeare’s life and the works that provide us with our only access to that life. For Keats the day-to-day actions of Shakespeare’s life rise to the level of allegory precisely because Shakespeare exists for us primarily in his dramatic poetry – in the language of his characters. Keats pursues an understanding of Shakespeare’s poetic mind through an intense study of his characters and poetry; by habitually immersing himself in Shakespeare’s art, Keats hopes to achieve for himself the poetic dexterity which allows Shakespeare to exist through the lives of his creations. By exploring Shakespeare’s plays, particularly *A Midsummer Night’s Dream* and *A Winter’s Tale*, two plays that Keats alludes to in some of his greatest poems, we can gain further understanding of the tension and pursuits within Keats’s own poems, and see how his development as a poet was shaped by his predecessor.

“Fog Warning”: Winslow Homer’s Confrontation of Nature

Caroline Hellman '01, *English and Art History*
 ADVISOR: William Cain, *English* and
 Rebecca Bedell, *Art History*

In many of his works, the American painter Winslow Homer (1836-1910) depicted man’s confrontation of nature, and specifically, the sea. By examining works spanning the duration of Homer’s life, a progression is evident from man’s positive and fulfilling relationship with nature, to man’s tenuous and ominous struggle with nature. Homer suggests that mankind must respect and revere nature’s magnitude and power in order to survive.

Invoking Cabell: Name-Dropping in the 1920s

Lorry Perry '01, *English*
 ADVISOR: Lawrence Rosenwald, *English*

Twentieth-century American southern writer James Branch Cabell has not been read much since the 1920s when his work gained popularity due to his supposedly decadent lifestyle. Besides stirring up rumors concerning his homosexuality and murderous tendencies, though, Cabell also contributed a 54-volume fantasy book to American literature that was admired by Samuel Clemens and T. S. Eliot alike for its ironic wit and freedom from restricting morality. Cabell’s cycle of *Manuel* meant a variety of things to his contemporaries, and – given the dearth of recent scholarship on Cabell – it is only through his literary friends using his name in their own writing can we learn about his place in American Modernism. He has been touted as a father of science fiction and fantasy; he has also been called a lazy Victorianist and hopeless Romantic. One purpose of my project is to understand what various authors such as F. Scott Fitzgerald and Carl Van Vechten mean to accomplish when they call upon Cabell in their novels. Another goal for my work on Cabell is to prompt the return of his work to the canon. (I am grateful to the Dean of the College and the Schiff Fellowship Program for supporting my research.)

Voices I (papers/readings)

Crossing the Harvard Bridge: A Collection of Personal Essays

Karyn Y. Lu '01, *English and Katharine R. S. Freeman '02, English and American Studies*
 ADVISOR: Lawrence Rosenwald, *English*

“Yet there are moments – walking home and gesture talking with a friend, writing certain words, the way I touch the left side of my forehead with three fingers – when I think to myself, those are my mother’s hands making those movements.”

“There are many pieces of furniture and decorations that are far too old to be used practically now, but no one in my family has the heart to throw them out. They are too familiar, these silent, faithful migrating

companions of ours, these curators of our sense of stability.”

In the two years since we first began this project, we have written on topics including family, death, time, writing and silence. We’ve explored the various forms the personal essay can take, including poetry, dialogue and fiction. Using Aesop’s fable of the hedgehog and the fox, we will also be reflecting on the experience of writing personal essays, and on our different approaches to the genre.

Literature and the Arts in China (paper session)

Redefining the Memoir: A Comparative Analysis of Narratives from the Cultural Revolution

Lydia Chan '01, *English and Chinese Studies*
 ADVISOR: Ann Huss, *Chinese*

The study of memoir as a genre involves discussion of its related forms – autobiography and biography – for all three explore the interplay of truth, memory and experience. While a memoir is more compressed than an autobiography, subordinating the author’s personal life to the public events in which s/he has participated, this seems to be a more Western definition. In comparing several memoirs of the Cultural Revolution, this presentation examines how narratives translated from Chinese and written for a Chinese audience differ from those written in English and written for a Western audience, compelling us to redefine the memoir as we know it.

Chinese Proverbs – One Student’s Independent Study Experience

Kristen Looney '01, *Chinese Studies*
 ADVISOR: Sherry Mou, *Chinese*

Chinese proverbs or chengyu are rich expressions because their meanings stem from stories in Chinese history and literature. Studying chengyu is one approach to learning about Chinese culture. These proverbs are generally constructed by the combination of four Chinese characters. To students of modern Chinese, the meaning of chengyu is not apparent without



background knowledge of classical Chinese language and major works of literature. For the fall 2000 semester, I conducted an independent study of Chinese proverbs under the guidance of Professor Sherry Mou of the Chinese Department. I would like to share with the community my experience and some of my favorite proverbs.

Contemporary Hong Kong Art and Cultural Identity

Peggy Wang '01, Art History and Chinese Studies

ADVISOR: *Heping Liu, Art History*

"Contemporary Hong Kong Art and Cultural Identity" is deceiving in that none of the terms constituting this title asserts an explicit definition. Although Hong Kong cultural identity has often been commodified in the form of the cliché "East meets West," a multitude of interpretations exist. The term "Hong Kong" can simply be thought of as the name of a place, yet the associations and images of this place vary so greatly that there is no one prevailing interpretation on which one can depend. A center of cultural exchange or a cultural desert? Although the contradictions do not point towards a simple representation, they do indicate the ideological pluralism that exists in this community. Looking at contemporary Hong Kong artists and their work, this presentation will shed light on various reactions to this controversy, particularly in reference to the 1997 handover during which cultural identity was most critically questioned and diversely represented. (Research supported by a Schiff Fellowship.)

Economic Issues

National Economic Development: Case Studies (paper session)

A History of World Bank Involvement in the Democratic Republic of the Congo since Independence

Susan Nazzaro '01, History

ADVISOR: *Wilfrid Rollman, History and Lidwien Kapteijns, History*

The Democratic Republic of the Congo is a nation in crisis. Since the overthrow of

President Mobutu Sese Seko in 1997, a bitter civil war involving several African nations has eaten away at the structure of the state and plunged the nation further into chaos. The current state of the country has its roots in the economic and political history of the Congo. At independence in 1960, the Congo descended into a long period of economic and political instability. An examination of this period is crucial to any understanding of the current situation. This discussion will highlight one actor in the Congo, the World Bank and present a chronology of the Bank's activities in the nation since 1960, the year of independence. The individual Bank projects, the ideology behind the Bank's involvement in the Congo, and the historical importance of the Bank in the Congo, relative to other actors, will be discussed in the framework of an economic history of the Congo.

The Great Depression and the Search for a New Order in Japan and the United States

Rosa M. Perez '01, History

ADVISOR: *Yoshihisa Matsusaka, History*

After the stock market crash of 1929 and the ensuing depression, nearly every country faced economic and social crises of unprecedented scale. In Japan, reform-oriented intellectuals, often described by historians as "fascists," led the country's search for a new order to overcome the depression. At the same time their contemporaries in America, the progressive architects of the welfare state and new liberalism, were engaged in the creation of the New Deal. Although their respective political orientations appear to be diametrical opposites, intellectuals in both countries shared similar ideas about reform through the power of the state based largely on their critique of capitalism and their experiences with economic mobilization during World War I. A comparison of their policies of economic and social policies reveals that, despite profound differences in cultural and political context, "authoritarian" Japan and "liberal" America developed remarkably similar responses to the depression.

Gender and Sexuality

Literary Expressions of Gender Roles (paper session)

d-EVE-fense: Critical Interpretations of Milton's Eve

S. Serena Hui '01, English

ADVISOR: *L. Terrell Tyler, Jr., English*

The portrayal of Eve in John Milton's *Paradise Lost* has been interpreted in many controversial ways, with both misogynistic and feminist views. Not only have these views both been strongly supported, but also the social context in which these views were conveyed has given Eve a complex number of facets that have changed over time. Interpretation itself is not subject to any rigid structure; because of this, Eve's role in *The Fall* has been a controversial topic. However, by studying Milton's other works, looking at philosophical influences, and reading relevant excerpts from the Bible, Eve is redeemed. Through the reinterpretation of Milton's description of Eve, it is clear that he portrayed the feminist view of an independent woman who executed her actions intentionally and deliberately.

"She's Good Meat with Lots of Flavor": Marriage Negotiations in Renaissance Florence according to Alessandra Strozzi

Catherine L. Ware '01, Medieval/Renaissance Studies and Italian

ADVISOR: *Margaret McGlynn, History*

The letters of Alessandra Macinghi Strozzi, written from 1447 to 1470, provide windows into the daily life of a Florentine widow with five children, three of whom spent time in exile. Throughout her letters, the struggle to maintain her sons' honor and that of the Strozzi family in general is Alessandra's central concern. Among the aspects of life in Florentine society that she feels are the keys to honor are successful careers, good marriage alliances, a place in political life and keeping up a respectable appearance. Of these concerns, that of finding suitable husbands and wives for her children is always foremost in her mind. She writes of these marriage arrangements as one would of

business deals involving large sums of money and carefully chosen alliances. I will explore the business of matchmaking and dowries by using as an example the marriage negotiations for Alessandra's oldest daughter Caterina.

The Importance of Being Earnest: The Unapologetic Individuality of a Girl Facing the Societal Flux of Zimbabwe's Independence in Tsitsi Dangarembga's *Nervous Conditions*

Seemi Syed '03, *English*

Advisor: Margaret Cezair-Thompson, *English*

From the first sentence of her novel, *Nervous Conditions*, Tsitsi Dangarembga casts a heroine whose unapologetic individuality startles the reader. Her narration strikes swiftly and directly at the heart of the complex issues facing a Zimbabwe on the cusp of independence in the '60s and '70s. By casting her reportage in the psychologically analytical perceptions of Tambu, Dangarembga reveals both the internalities and the externalities of the diverse situation facing a society in upheaval. *Nervous Conditions* describes anxious times and the often difficult decisions that its characters make in those times. It is a story about choice: freedom to and freedom from. It signals the emergence of a New Africa, one that has awakened from the long sleep of colonialism to oppose the constraints that hemmed it to ways contrary to its natural processes, and to embrace the truth of its condition.

Ave Eva: Selected Poems by Hildegard of Bingen

Anne W. Hennessy '01, *Medieval/*

Renaissance Studies

Advisor: Lawrence Rosenwald, *English*

Hildegard of Bingen was a "Wellesley woman" of the early Middle Ages. The lyrics written by this twelfth-century abbess and polymath extensively examine the juxtaposition of Eve and the Virgin Mary. For the production of my book, I selected four antiphons and one responsory, all of which address this relationship. I translated the poems from their original Latin, then printed the book, using a Vandercook SP-15 with hand-set Centaur

and Arrighi types. This project was a unique opportunity to combine two of my passions: poetry and book arts, which when these poems were written, were one in the same. The written word was considered an art form, as illuminated manuscripts attest. My book is not a manuscript reproduction, but rather it incorporates the ideas and ideals of one – the contrast of black text to a creamy white page, the sanctity of handcrafting and the painstaking process of illustration.

Point of View (exhibition)

Point of View

Katrina Spicer '03, *Anthropology,*

Meghann McCrory '01, *American Studies*

and Keif Schleifer '01, *Architecture*

Advisor: Carlos Dorrien, *Art*

Consider the layered meanings associated with the phrase "point of view." In its most literal sense, locality accommodates observational perspective. In figurative terms, however, observation motivates personal perspective. Viewers transition through this "site-unspecific" installation which is meant to facilitate an experiential analysis of the layered meanings of "point of view." Although the creators of such a work can construct a position or locality which forces, focuses or limits one's observational view, they cannot create the meaning. The viewer derives (the) meaning based upon personal perspectives but these perspectives change as the viewer's physical position changes. The essence of this installation, then, is simply that a person's "point of view" is a function of and contingent upon their "point of view."

Gender in Educational Settings (paper session)

School-Aged Girls' Perceptions of Father Involvement and Academic Achievement

Janise Kim '01, *Psychology*

Advisor: Tracy R. Gleason, *Psychology*

Research has shown that parents influence children's development; for example, parent involvement is known to be related to academic achievement in children. Few studies, however, have examined the spe-

cific influences of fathers' involvement in daughters' lives. This research examines how school-aged girls' perceptions of their fathers' involvement in their academic lives, and their lives as a whole, relates to their academic achievement and their perceptions of their own academic ability. Using interviews with fourth and fifth grade girls to assess perceptions of father involvement and scores on standardized tests as a measure of academic achievement, this study provides further insight into how fathers influence daughters' academic achievement.

Gender as a Status Characteristic among Preschool Children

Sarita Kishore '01, *Psychology*

Advisor: Linda Carli, *Psychology*

This research tested whether gender acts as a status characteristic among preschool children. Status characteristics are individual qualities such as age, race, gender or education that are linked to power and influence. Past research has shown that gender does act as a status characteristic among adults, with men possessing higher status than women, but such research has not been done with children. In this study, children were presented with stories involving male and female puppets; in each story one puppet attempts to influence the other using either a masculine or feminine style of communication. It was hypothesized that if gender acts as a status characteristic, children should report that boys are more influential than girls are and that boys are also more dominant and competent than girls. Tests of this hypothesis will be presented and their implications discussed.

Friendship Similarity among College Women: An Ecological Perspective

Jenny Ly '01, *Psychology and Chinese*

Advisor: Nancy Genero, *Psychology*

Previous studies have shown that adolescent minorities tend to choose their friends on the basis of race/ethnic identification, whereas nonminorities place a greater emphasis on similar values and interests. This study explored patterns of friendship similarity among female college students from a person-in-context perspective.



Toward this end, a diverse sample of Wellesley students viewed five vignettes depicting “hypothetical” friendship scenarios. Each vignette was based on one of the following similarity criteria: race/ethnic identification, values, socioeconomic status, interests and activities and geographic proximity. Following each vignette, participants were asked: 1) to rate the extent to which the characters in the vignette were likely to form a friendship, and 2) to rate the quality of that potential friendship. To assess the impact of contextual variables on these ratings, data were gathered on difficulties associated with transition to college, acculturation and multicultural exposure.

Political Development

Mobilizing Voices (paper session)

A Regionalist Assessment of Why Women in the West of the United States Gained the Right to Vote before Women in Other Regions of the United States

Lucy N. Heenan '01, *American Studies*
ADVISOR: Elizabeth Varon, *History*

The woman’s suffrage movement was one of the most well documented movements in American history. Yet, the scholarship that has been done in this field has mainly focused on the East. While the franchise was extended to American women in 1920, some women in the Western territories had the right to vote a half a century earlier. However, there is little analysis as to why the West enfranchised women before the East. The work that has been done on the West has looked at suffrage from an isolationist viewpoint. Western states have either been studied individually or as a collective group with little respect to what was occurring in the East at the same time. There has been little attempt at comparing and contrasting eastern and western leadership styles, campaigns and tactics. A comparison of Colorado and Massachusetts reveals much about women’s suffrage in the West. This analysis exposes regionalism as an explanation for the extension of the franchise to women in the West.

What Are the Options? Factionalism and Economic Development on Fort Peck Indian Reservation

Jessica Fawn Koch '01, *Studio Art*
ADVISOR: Nathaniel Sheidley, *History*

For more than a century, American Indian reservations have ranked among the poorest communities in the United States. Recent scholarship has blamed unstable reservation governments for this predicament, but this perspective overlooks the importance of the history behind governmental instability. Through historical examination of the Fort Peck Indian reservation in Montana, factionalism is identified as an underlying factor inhibiting economic growth. Federal policies, local patronage networks and disputes rooted in cultural change have created an environment of factional conflict that impedes economic development at Fort Peck, but contemporary proposals do not adequately address the impact of these internal and external influences. Successful solutions to the economic problems confronting reservation communities must address the causes and consequences of factionalism.

Awakening the Sleeping Giant: Mobilization of Latino Voters in California

Franchesca Herrera '01, *Political Science*
ADVISOR: Tom Burke, *Political Science*

In a true democracy the voices and concerns of all individuals and groups within society influence the policies and practices of government. Latinos are currently the largest ethnic minority group in California, making up over 26% of the total population, but they represent a much smaller share of the electorate. For this reason, Latinos have often been described as the sleeping giant. In order to increase political participation among Latinos in California, thereby giving voice to their social and political concerns, an effective and widespread mobilization effort must be established. The battle over Propositions 21 and 22 in the March 2000 election provides insight into the opportunities for and barriers to Latino mobilization. Latino community organizations must reassess and reformulate their current efforts in order to establish a viable and effective long-term mobilization campaign.

The President in Cowboy Boots: Vicente Fox and the Mexican Election of 2000

Michelle Lapointe '01, *Political Science and Spanish*

ADVISOR: Lois Wasserspring, *Political Science*

The presidential election of 2000 marked a dramatic change in Mexican politics. For the first time in 71 years, voters chose an opposition party candidate over the nominee of the ruling party, the Institutional Revolutionary Party (PRI). The victor was Vicente Fox, candidate of the right-of-center National Action Party (PAN). A former Coca-Cola executive, Fox promised to bring reform to the fragile Mexican democracy, which has been undermined by years of semi-authoritarian, one-party rule. I will investigate how Fox was able to unite people of various backgrounds and political persuasions to form a coalition to bring down the ruling party. Studying pre-election and exit polling, electoral data and campaign strategy, I will present an analysis of Fox’s victory and consider consequences for further democratization in Mexico.

Science and Technology

New Approaches to Scientific Problems (paper session)

Construction and Calibration of Optical Tweezers at Wellesley

Gretchen Campbell '01, *Physics*
ADVISOR: Theodore W. Ducas, *Physics*

This year, an advanced infrared “optical tweezers” setup was constructed and characterized at Wellesley. Optical tweezers have many useful applications, ranging from constructing very small “nanostructures” to studying biological systems. Our setup will be used to study physical properties of biological interactions. These devices work on a much smaller scale than do conventional tweezers, and use lasers to “grab” small objects. Once trapped, the objects can be held for observation, moved or collided with other trapped objects without damaging or contaminating samples. In order to study physical interactions quantitatively, one

must first have a good calibration of the trapping force. Our optical tweezers have computer-controlled manipulation of the sample position which allows us to calibrate the horizontal trapping forces using the known fluid drag forces. Vertical trapping forces will be measured by varying the power of the laser. (Research supported by a Schiff Fellowship.)

Three-Dimensional Manipulation of Microscopic Objects by Optical Tweezers and Laser Scalpel

Allison Desiree Dupuy '02, Physics and Biology

ADVISOR: *Theodore W. Ducas, Physics*

Optical tweezers are tools for noninvasive manipulation of micrometer-sized particles. They are constructed by coupling a laser beam into a microscope objective which focuses the light to a small waist where objects can be trapped. Laser scalpels are used to ablate, fuse or cut biological objects using tightly-focused laser light. While conducting research in the laser cooling and trapping group at the National Institute of Standards and Technology, I worked on the construction and calibration of a laser trapping/ablation system consisting of optical tweezers and a laser scalpel. This versatile device allowed us to study biological interactions of the microscopic level. Polystyrene spheres and liposomes were trapped and

manipulated within imprinted microchannels to study their surface adhesion interactions with different plastic materials.

The experimental studies with liposomes are precursors to further work in the field of biotechnology, in particular, the use of liposomes as drug delivery systems. (Research supported by NIST SURF Program and the National Science Foundation.)

Laser Cooling and Trapping of Atomic Rubidium

Elaine Ulrich '01, Physics

ADVISOR: *Glenn Stark, Physics and Robbie Berg, Physics*

In recent years, new technology that uses lasers to cool a gas of neutral atoms has made giant leaps to bring us closer to absolute zero (the coldest temperature possible) than we've ever been before. This new technology, which allows us to cool atoms' orders of magnitude below room temperature, has opened doors for improving time and frequency standards that are of increasing importance for many applications ranging from communication and navigation to tests of fundamental science. I will discuss how laser cooling and trapping works and describe the apparatus I have constructed here at Wellesley. (Research supported by Massachusetts Space Grant Consortium.)

The Arts

Contemporary Music (papers/performance)

New Music at Wellesley: Student Compositions in the Twenty-First Century

Mandy Wong '01, Music and Alexandra R. Swartsel '01, Music and Political Science
ADVISOR: *Arlene Zallman, Music*

The study and practice of the art of composition is an integral part of the lives of students of music at Wellesley College. Music evolves through the creation of new techniques and the study of older ones. As musicians, we experience music more fully as we are challenged to generate it as composers and rediscover it as performers. This presentation will include performances and discussions of music written by Wellesley College students both inside and outside the classroom. (Composition by Mandy Wong '01 supported by the Schiff Fellowship.)

Art 322 Advanced Printmaking (exhibition)

ADVISOR: *Phyllis I. McGibbon*

11:00 – 12:10

About Wellesley**Student-to-Student (panel)****Peer Tutoring at Wellesley:
An Inside Look**

Morgan Adams '03, English and History, Emily Carr '03, Neuroscience, Laura Feldman '01, Sociology, Laura Flahive '03, Art History and Political Science, Martina Koeva '03, Computer Science, Sudha Krishnan '03, International Relations and Spanish, Tara Ramanathan '01, German and Lara Zaroulis '01, English
 Advisor: *Barbara Boger, The Learning and Teaching Center*

The Peer Tutoring Program at Wellesley consists of 19 APT (Academic Peer Tutors) Advisors and over 170 department tutors. In this session a panel of APT advisors and department tutors will reflect on their experiences as tutors in a collaborative learning environment. In particular, they will discuss the climate of learning at Wellesley and how the tutoring job affects their learning experience. This panel celebrates the academic support networks that foster events such as the Ruhlman Conference.

Analysis of Literature and the Arts**Voices II (papers/readings)****Group Writing**

Caitlin Blaser '04, Emily Flitter '04, (Arden) Elizabeth Hill '01, English, Lindsay Ryan '03 and Lacey Feldman '03
 Advisor: *Alexandra Johnson, Writing*

Creative writing is often a very personal activity. We have started a small creative writing group to explore personal expression through various writing exercises. In addition to these weekly activities, we have shared longer works and seen how our writing has developed and evolved as the result of being exposed to other people's ideas.

**Analyses of Performance and Exhibition (paper session/
performance)****Doubly Contextual – The Use of
Photography in the Display of African Art:
A Comparison of Two Recent Exhibitions**

Moriah Evans '01, Art History and English
 Advisor: *Anne Higonnet, Art*

This project focuses on and compares two recent exhibitions of African art that use photography to provide a context for African objects. *Heads and Tales: Adornments from Africa* at Harvard University's Peabody Museum of Ethnography and *Passages: Photographs in Africa* at the Brooklyn Museum of Art serve as case studies to questions about museums, the art historical canon and the relationship between the West and its Others. Why do museums called "ethnography" museums and museums called "art" museums both display African art objects? How and for whom? All exhibition displays of African art in museums take place within a system of political, economic and artistic histories. Just as it is necessary to have an indication of context to understand the African art object, it is also necessary to know the context of these museum exhibitions which have the power to shape cultural perceptions.

**An Architecture of Music: The
St. Matthew Passion of J. S. Bach**

Laura Thornton '01, Music and Architecture
 Advisor: *Claire Fontijn-Harris, Music*

A choral composition of unprecedented dimensions, the *St. Matthew Passion* is one of J. S. Bach's greatest works. Putatively intended for the 1727 Good Friday services of his Lutheran congregation in Leipzig, it testifies to his consummate musical skill, which to this day continues to succeed in stirring even the most concealed of human emotions. This paper argues that in order for such magnificence to be comprehensible, the composer gave the work a durable internal structure. Just as the great buildings of civilization

require support systems, so do works of music; indeed, one can discover that musical architecture forms the foundation of Bach's *Passion*. Five pillars of repetitions of a popular Protestant chorale support the surrounding musical movements, thereby functioning as its framework. The placement and variation of these pillars determines the structure and flow of the work, shaping it into an architecture of the highest form.

**The Big Time in a Small Town: The First
Ten Years of Blockbuster Era Cinema
(1975-1984) in Randolph, Vermont**

Megan C. Adair '01, American Studies
 Advisor: *Vernon Shetley, English*

Early in the Blockbuster Era, the film audience in Randolph, Vermont interacted with national film trends but maintained a unique sense of taste in the face of many box office hits. While many hit films were shown at the single-screen Play House movie theater in Randolph, the small-town movie-goers flocked to films such as *The Trial of Billy Jack* (1974), *Snow White and the Seven Dwarfs* (1937) and *National Lampoon's Animal House* (1978), in addition to blockbuster hits such as *Jaws* (1975), *Star Wars* (1977) and *ET: The Extraterrestrial* (1982). Despite this varied taste for films, the Randolph audience did not financially support the Play House. The old theater had reopened for business in 1974, but closed again after ten years of insufficient business. As a community, the Randolph audience attended films on the basis of personal interest in varied titles, rather than movie-going habit.

Gender and Sexuality**Asian Women: The Myth and the
Reality (paper session)****The Women of Murakami Haruki**

Pamela Pontius '01, Japanese Language
 Advisor: *Eve Zimmerman, Japanese*

Works by Murakami Haruki career between reality and fantasy, creating a

world where the main character, Boku, invariably a man, struggles to find himself. Boku often feels lost or detached from those around him, and yet he always has at least one female counterpart. This paper explores the role of the women in relation to Boku as a reflection of his displacement and of the unobtainable peace he seeks. From frustration to fulfillment, the sexual relations between Boku and various female characters reflect his struggles within the constraints of modern society. A best-selling Japanese author, Murakami is well-translated in English. He has been praised for his fresh simplistic style and his whimsical plots.

Images of Women of the Tang Dynasty through Poetry and Literature: Exciting Women in Exciting Times

Helen White '03, Chinese Studies
 ADVISOR: *Sherry Mou, Chinese*

China experienced a period of prosperity and reached a cultural height during the Tang Dynasty (618-908 CE). The proliferation of literature, particularly poetry, reflects the romantic mind-set and the material affluence of this time. The women of the Tang Dynasty offered substantial contributions as subjects and/or authors of this literature. Most interestingly, it was during this dynasty that a woman reigned as Emperor and elevated the status of women by instituting certain practices and standards.

This presentation is geared to comparing and contrasting the image of women of the Tang dynasty in literature with those in other media, such as painting and sculpture. Moreover, the presentation, using the literature of the time as a guide, will examine women's attitudes, attitudes towards women and how these attitudes interacted.

Women at the Margins (paper session)

Motherhood among Women at the Margins

Elaine Fitzgerald D4
 ADVISOR: *Rosanna Hertz, Women's Studies*
 and *Susan Reverby, Women's Studies*

The women involved in this study are long-term substance abusers, most of

whom are court ordered to be in treatment, as stipulated by the Department of Social Services (DSS), and/or recently released from prison. Many of the women have lost their children to DSS or to other family members. A few are under the threat of losing their children should they not meet their treatment goals and complete their tenure at the half-way house. This study is based on a series of in-depth interviews and field observations at a local half-way house and discussions with various case workers and agencies involved in their rehabilitation. The goal of this research is to determine the women's relationships to their children and the agencies involved in their care and to develop an understanding of the women's and their workers' interpretation of motherhood: their conception of what constitutes "good mothering" and whether or not all mothers should mother.

The History of the Terraba Indigenous Women of Costa Rica

Maria Xirinachs '01, Women's Studies and International Relations
 ADVISOR: *Rosanna Hertz, Women's Studies*
 and *Susan Reverby, Women's Studies*

Terraba indigenous women live in the South Pacific coast of Costa Rica in an underdeveloped indigenous territory. Terraba women live in conditions of poverty and neglect from the government, state institutions and society. They are discriminated against because of their ethnicity and gender. They are invisible. Their history is ignored; it has never been written. Nevertheless, Terraba women are strong and innovative, and they are leaders amongst indigenous groups. Daily they challenge poverty and discrimination. I believe their strength, perseverance and survival strategies are empowering information for women in similar conditions and women overall. My purpose is to share with you my research on their history from colonial times to the present day and focus on the way they have survived throughout these years in conditions of poverty and neglect. I want to rescue the life histories of these courageous women and share their testimonies with others in order to prevent such valuable information from becoming lost.

Oral Histories on Women's Reproduction

Cortney L. Harding '02, Political Science and Women's Studies
 ADVISOR: *Rosanna Hertz, Women's Studies*
 and *Susan Reverby, Women's Studies*

Women in the United States face a unique dilemma when making the decision whether or not to have an abortion. While *Roe v. Wade* made the procedure legal 27 years ago, women stateside must deal with a harsh political climate surrounding their decision. On any given day, a woman might have to be escorted through a protest, receive a leaflet on the street stating that her soul is lost to the devil, or hear a leader of the religious right calling her "selfish" on the evening news. How does this impact the way women who have abortions feel about the decision they made? I have drawn comparisons between the experiences of women in the U.S. and the experiences of women in the Netherlands, where the political climate surrounding abortion and sexual freedom in general is much more liberal. I hope to explore the effects that the political climate has on a woman's choices and emotions.

Political Development

New Perspectives on United States Political History (paper session)

The American Dream in the Antebellum South

Amanda K. Rudman '01, American Studies
 ADVISOR: *Nathaniel Sheidley, History*

For most Americans, the phrase "American Dream" conjures up the image of an industrious individual, who, despite humble beginnings, achieves success. Although this phrase first entered the American vocabulary during the 1930s, historians have argued that the same concept of social mobility was used to promote and defend the wage labor system that emerged in the northern United States during the early nineteenth century. While this argument documents an important development in the conception of the American Dream, it fails to address southern notions of success during the antebellum period. Unlike

its northern counterpart, southern society remained largely agricultural and dependent upon slave labor. This presentation explores the southern definition of success from 1830 to the onset of the Civil War in 1861.

Reinterpreting America: Freedom, Obligation and the Democratic Ideal in the Political Theory of Franklin Delano Roosevelt

Alexandra R. Swartzel '01, Political Science and Music
 ADVISOR: *Edward Stettner, Political Science*

Franklin Delano Roosevelt has been painted simultaneously as a remarkable president who shepherded America through both the Great Depression and World War II, and as a political dilettante with little true regard for ideology. I will explore the possibility that Roosevelt's ideas were far more coherent and comprehensive than previous analyses would have us believe. Roosevelt integrated traditional liberal conceptions of social contract theory and negative rights with a unique perspective on American history and a radical reformulation of the relationship between government and the people. In so doing, he created a political philosophy that was extraordinarily conducive both to his personal electoral success and to the evolution of the modern "welfare state." Roosevelt's reimagining of the American dream as an ideal based largely on positive freedoms paved the way for the success of the New Deal and permanently changed the landscape of liberalism in America.

Science and Technology

Structure: Organismal, Molecular, Atomic (paper session)

Emission Spectroscopy as a Probe of Cooperative Electronic Interactions in Transition Metal Complexes

Amanda L. Mifflin '01, Chemistry
 ADVISOR: *William F. Coleman, Chemistry*

Electronic energy transfer between transition metal ions is a common phenomenon in the solid state and in solution. This communication between molecules by energy transfer produces a number of effects, including the broadening of spectral transi-

tions. However, it is difficult to determine if the cause of a particular broadening is due to energy transfer. Measuring the spectra in dilute solution or in doped solids is frequently inconclusive due to the formation of aggregates resulting in proximity of the metal ions. Our work takes a different approach to address this question. We dissolve complexes of Cr (III), a d_3 system, in various plastic matrices, and then use emission spectroscopy to test for energy transfer. The emission of these complexes arises from the ${}^2E \rightarrow 4A_2$ transition, and should be quite sharp in the absence of energy transfer. We will present data on the synthesis of the matrices, the temperature dependence of the emission spectra and the dependence of emission lifetime on metal ion concentration in the matrix in an effort to determine whether or not cooperative interactions exist in the complexes of Cr (III) with delocalized ligands such as 2,4-pentanedione. These cooperative interactions should increase as the concentration of the metal ion increases.

Synthesis and Structural Analysis of a Thiopeptide

Avani Patel '01, Biochemistry and French
 ADVISOR: *Julia Miwa, Chemistry*

A 12-residue peptide was previously shown to assume a β -hairpin conformation. A β -hairpin, the most basic structural element of an anti-parallel β -sheet, is a secondary structure that is currently not well understood. Secondary structure formation is maintained by multiple complex intermolecular interactions, such as hydrogen bonding. In this study, a 12-residue peptide with a thioamide in place of an amide was synthesized and the consequent effect on secondary structure formation was investigated. The increased acidity of the thioamide, observed by its lower pKa, enables the alpha nitrogen to more readily donate its proton for hydrogen bonding. The thioamide substitution should thus strengthen the hydrogen bonding between the two strands of the β -hairpin and increase the stability of the structure. The synthesis of a thioacylating reagent and solid phase peptide synthesis inserted the thioamide into the peptide. Mass spectral analysis showed that the thiopeptide was synthesized. COSY,

ROESY and TOCSY 2D NMR data will indicate if the peptide is forming the β -hairpin turn. (Research supported by a NSF-REU grant.)

The Evolution of Postcranial Morphology in Delphinoidea

Stephanie Anne Schur '01, Paleobiology
 ADVISOR: *Emily Buchholtz, Biological Sciences*

Living delphinoid cetaceans display a range of swimming styles. Skeletal characteristics of fast and sustained swimmers within this group include discoidal torso vertebrae with elevated metapophyses and anteriorly inclined neural processes, tailstock vertebrae with elongate centra and anteriorly inclined neural arches and high vertebral counts. Simple physical models indicate a causal relationship between these osteological characteristics and decreased body flexibility.

Fluke aspect ratio evidence strongly supports the correlation between powerful swimming and rigidity of the vertebral column. The ratio of the fluke span to surface area allows estimates of dorsal-ventral recoil during swimming. Higher aspect ratio flukes, modest recoil and efficient energy use characterize derived, powerful swimmers.

Trait polarization by reference to living non-delphinoid odontocetes and fossil delphinoids allows a preliminary reconstruction of the historical sequence of evolutionary innovations responsible for character distribution among living species. Times of character innovation can be constrained using exceptional fossils. (Research supported by Schiff Fellowship and Georgeanne Miller Mulhern Summer Research Fund.)

Self and Identity

A Woman's Voice: Authenticity vs. Role-Playing (paper session)

The Impostor Phenomenon and Level of Voice: Gender Differences in Distress over Inauthenticity

Amy L. Gower '01, Psychology and Women's Studies
 ADVISOR: *Julie K. Norem, Psychology*

Two related constructs in psychology focus on whether people feel they are being

“real” in their interactions. The “Impostor Phenomenon,” refers to feelings that one has fooled others into believing that one is competent. “Loss of Voice” refers to when people feel unable to express their feelings and opinions freely. These two constructs are similar in their hypothesized societal and familial origins, but have yielded conflicting results with respect to gender. This study was designed to explore the relationship between the Impostor Phenomenon, Loss of Voice, psychological masculinity and femininity and a newly developed measure of distress concerning inauthenticity in interpersonal relationships. Two hundred men and women completed this set of measures. We hypothesize that differences in psychological masculinity and femininity, more than gender alone, will be related to impostor feelings and loss of voice. Because feminine values include authenticity in relationships, feminine individuals should experience greater conflict over authenticity.

Original Poetry by Arden Hill

(Arden) Elizabeth Hill '01, *English*
 ADVISOR: James Noggle, *English and Alison Hickey, English*

My presentation is a reading of several poems from an original collection I have been working on during the past year. The majority of the poems are centered on female life and are written in the first person. Often the “I” confronts another character in the direct addresses of “you.” Most of the poetry describes events in my life. The process of writing such poems reconciles myself with my encounters. Although my poetry is confessional in style, the “I” speaker is not always myself. I often alter details and shift point of view from witness to participant. Therefore, women with children or husbands speak through the verse. These women and others confront the reader with accounts of their physical and emotional experiences.

The Sculpture of Evelyn Beatrice Longman

Margaret Samu '01, *Art History and French*
 ADVISOR: Rebecca Bedell, *Art*

Students walking through the main entrance to Clapp Library every day may

not realize that they are passing the bronze doors made by Evelyn Beatrice Longman, a prominent early-twentieth-century American sculptor. Longman (1874-1954) was the first woman sculptor to become a full member of the National Academy of Design. In publications of her day, she was hailed as one of the most successful women sculptors and was compared favorably against the men with whom she competed for commissions. Despite her prominence during her lifetime, she has been virtually ignored in contemporary scholarly literature. Researching how Longman received commissions for large-scale public monuments reveals how she was able to establish a professional reputation in a male-dominated art world. Examining her work within its art historical context shows how the tension between modernism and traditionalism, as well as changing beliefs about the role of public sculpture, have affected how her work is remembered today. (Research supported by a Schiff Fellowship.)

Adult Psychological Processes (paper session)

Interpersonal Distance: How Situational Variables and Age Influence Inferred Interpersonal Relationships

Theresa E. DiDonato '01, *Psychology and English*
 ADVISOR: R. Steven Schiavo, *Psychology*

This thesis investigates the extent to which people consider situational variables in their use of interpersonal distance as a cue for interpersonal relationships. Interpersonal distance describes the physical spacing between two interacting individuals. Past research consistently demonstrates that people interacting with smaller interpersonal distances are perceived as having closer relationships than people interacting with larger interpersonal distances. This study questions how perceptions of relationships change when situational variables of choice and stress are manipulated. Participants were shown pictures of figures in high stress, low stress, choice and no choice situations and were asked to rate the degree of friendship between the figures. Participants ranged from preschool to college age.

A Study of Underlying Cognitive Mechanisms in Implicit Memory

Amanda Knowles '01, *Psychobiology*
 ADVISOR: Margaret Keane, *Psychology*

The existence of multiple memory systems is an important topic in psychology and will be the focus of this study. One form of memory is priming. Priming refers to an increased ability to identify a stimulus, such as a word or picture, after previously being exposed to that stimulus. It has been assumed that priming is beneficial because of the improvement in identifying stimuli as a result of this prior exposure. Recent research using a perceptual identification test has suggested that priming may not be solely facilitative, but instead may entail costs as well as benefits. This study will investigate how different experimental manipulations affect the cost and benefit in priming. The results will demonstrate whether the same underlying memory systems support the cost and benefit, or whether there are separate cognitive mechanisms supporting the cost and benefit in priming.

Life Course Implications of Adolescent Emotional Instability

Helen MacDonald '01, *Psychology and English*
 ADVISOR: Paul Wink, *Psychology*

The life-course implications of the personality characteristic of Emotional Instability were examined in a sample of 90 men and women studied from late adolescence through older age. Emotional Instability was defined in terms of a propensity to experience negative affect and have problems with impulse control. Because participants in this study were born in the 1920s and reached adolescence in the 1930s and 1940s, a time when gender expectations differed for men and women, Emotional Instability had different life-course implications for emotionally unstable boys and girls. A history of adolescent Emotional Instability for men manifested itself in lower economic attainment in older age. In contrast, emotionally unstable girls had problems with interpersonal relations and lower life satisfaction scores later in life. Comparisons of emotionally unstable

individuals who decreased in emotional instability with age (improvers) with individuals who remained high in emotionally instability throughout their lives (nonchangers) will also be discussed. (Research supported by a NSF summer grant.)

The Self, Close Relationships and Depression

Shannon M. Smith '01, Psychology
 ADVISOR: *Jonathan Cheek, Psychology*

Previous research has found that social support can protect against depressive symptoms. The present study explores this relationship further to see how individual differences in the construction of the self influence the protective process. The main hypothesis concerns whether different self-concepts are more or less protective against depressive symptoms in the presence or absence of a satisfying close relationship. I predict there will be an interaction such that more satisfying relationships will protect against depressive symptoms for those who are psychologically feminine, those with a relational orientation and Asian Americans. However, for those who are psychologically masculine, those with a personal orientation and European Americans, I predict there will be no relationship or a significantly weaker relationship between quality of relationships and depressive symptoms. Participants in this study completed a series of self-report measures assessing depressive symptoms, satisfaction with their relationships and the structure of the self.

Storytelling Transformed (panel)

Redefining the Narrative

Hye-Hyun An '01, Computer Science,
Kara L. Blanchard '01, History and Film Studies,
Diana H. Fong '01, Economics and Media Arts and Sciences and
Sheila A. Vyas '01, Media Arts and Sciences

ADVISOR: *Naomi Ribner, Art*

While the essence of storytelling will not change with the turn of the century, the means by which it is presented will. The emergence of new technologies allows the boundaries and substance of the traditional narrative form to be broken. In today's

world of computers, dreams can become a reality. What then do storytelling, reality and new technologies have to do with each other? To us, everything. Each one of us has chosen to use new technologies – computers, computer graphics or digital video – as the medium through which to tell our respective stories. The very nature of this medium forces the exploration of reality. We present four stories that question today's definition of the reality and the narrative.

Social Institutions and Processes

New Images of the Corporate World (paper session)

Controversy in Advertising: An Analysis of the Nike Campaign

Jessica Chan '02, Psychology and Economics

ADVISOR: *Thomas Cushman, Sociology*

My presentation examines reactions to a controversial advertising campaign launched by the Nike Corporation during the 2000 Summer Olympics in Australia. I explore the general issue of women and sexuality as portrayed in the media, with specific reference to an advertisement, which was part of Nike's general campaign to sell its products using violent images from popular culture. College students from various cultural backgrounds viewed the controversial Nike commercial aired during the 2000 Olympics. Reactions gathered from male and female group discussions were recorded. My study analyzes factors that influence audience response to this advertising campaign and explores differences in interpretations which occur along ethnic and gender lines.

The Bottom Line: A Look at Community Service and Volunteerism on One Firm's Recruitment and Retention

Jessica E. Dunsmore '01, Organizational Psychology

ADVISOR: *Robin Akert, Psychology*

A 1997 community relations report indicated that "more than three-quarters of professionals have full-time community relations responsibilities." This figure is

ever rising, and it is a call to action for those professionals with the time, resources and knowledge to help their community. This report is a case study of one Boston firm (Firm X) that seems to be excelling with the likeminded professionals who are committed to helping their communities by giving time, money, services and personal dedication. Firm X designed an initiative that not only makes community service a visible and active aspect of the firm, but it holds community involvement equal to the firm's core traditions, values and client relations. This study specifically focuses on two variables related to the life and success of the firm: recruitment and retention of employees. Further, it examines whether Firm X's initiative has discrete positive effects on these two variables and, in turn, on the overall quality of life of Firm X's employees. The traditional "bottom line" has shifted, and a professional commitment to community service not only affects members of the firm, but it affects the firm's overall success.

The Arts

A Bridge between the Classical and the Romantic (performance)

Performance of Franz Schubert's *Shepherd on the Rock* (Op. 129) for Voice, Clarinet and Piano

Margi Chan '01, Biological Sciences,
Emily Filpi '01, Psychology and
Tyler Wellensiek '01, Physics
 ADVISOR: *Isabelle Plaster, Music*

Schubert, an Austrian composer who bridged the worlds of Classical and Romantic music, was noted for the melody and harmony in his songs (lieder) and chamber music. *The Shepherd on the Rock* is a brilliant example of Schubert's artistry. It has a lyrical melody and harmony with piano and clarinet combining and contrasting with the voice. Featured in this performance are Tyler Wellensiek, soprano, Emily Filpi, clarinet and Margi Chan, piano.

SITeworks Studio Art (exhibition)

ABSENT: A SITeworks Installation in the Jewett Student Gallery

Tuyet Nguyen '01, Studio Art, Devon C. Miller '02, Art History and Studio Art, Katherine J. Megquier '01, Studio Art and Geology, Nirali A. Patel '01, Computer Science and Architecture, Israela I. Vera '01, Studio Art, Hilary C. Fry '01, Elizabeth Elder-Groebe '01, Alyssa A. Tang '01, Studio Art and Psychology, Sue-Jin Lee '01 and Kaetlyn Ann Wilcox '01, Studio Art
 ADVISOR: Elaine Spatz-Rabinowitz, Art

"ABSENT," a collaborative installation created by ten Wellesley artists, is the culmination of the ideas discussed and pursued throughout the semester in Elaine Spatz-Rabinowitz's "SITeworks" studio art seminar. The course explored issues of site specificity, environment, context, scale and interactivity in contemporary art. In "ABSENT," we explored the idea of loneliness. We divided the space into five separate units connected by various passageways. Each unit housed only the objects, furniture and lighting appropriate

to a specific, imagined personality: a father, a woman, a teenage girl, a grandmother and a little boy. The physical absence of the five "people" invited visitors to enter each cubicle to examine their rooms. Although they are "absent," can we still feel their presence? Despite each unit's proximity to the others, the five individuals suggested in "ABSENT" continue to represent feelings of loneliness and fail to make a connection with their neighbors.

Music from the Nineteenth Century (performance)

Beethoven and Brahms: Chamber Music from the Nineteenth Century

Bronwen E. Bromberger '01, Biochemistry, Margaret Brisch '01, Math, Lauren Taigue '04, Jane Park '04, Jessica Andrade '01, History and Art History, Mandy Wong '01, Music and Deborah A. Hayden '03, Latin and French
 ADVISOR: Nancy Cirillo, Music

Though they composed a large number of celebrated orchestral works, both

Beethoven and Brahms are equally well known for their chamber music. The two composers chose Vienna as their home, and there they composed works that formed the bridge between the classical forms of Mozart and the showy and dramatic music of Wagner and Liszt. Beethoven's *Quartet in F minor* was written in 1810 and showcases the tempestuous turn that chamber music had taken since the days of Haydn and Mozart. Brahms' *Trio for Horn, Violin and Piano in E-flat*, composed in 1865, signifies the movement toward the late romantic period. These two pieces epitomize, as well as any set of symphonies, the path that classical music took over the first half of the nineteenth century.

1:30 – 2:40

About Wellesley**Time and Change (panel)****Living with Legacy: The Architectural Past, Present and Future of Wellesley College**

CaraMae Cirignano '04, Architecture, Carolyn A. Schultz '04, Political Science and Astronomy, Jess Charlap '03, Media Arts and Architecture, Kathryn E. O'Rourke '02, Architecture and English, Sarah J. Hull '01, Architecture and Keif Schleifer '01, Architecture
 ADVISOR: John Rhodes, Art

The architectural climate of Wellesley College was marked with a burst of extraordinary growth and renovation in the last decade of the twentieth century. With each of these building projects, there has been a concern for the continuity of legacy and tradition. Similarly, these concerns hold prevalence today in the wake of the redevelopment of the landscape and road systems, the mitigation of contaminated property, thorough building renovations with technological updates and the construction of new buildings and superstructures. In meeting these contemporary needs, however, polarities often emerge between aesthetics, siting or modernity and tradition, yet the mainstay of the college is dependent upon the integration and perpetuation of our collegiate legacy. Various case studies of this campus invariably address some of these issues and convey their interconnectedness. Most important though, they are consistently relevant to the campus planning and thus can help shape our thinking about building at Wellesley in the future and the legacy that we will leave for others to live with.

Women's Identity and Community: A Group Design Project (paper/exhibition)**Stone-Davis Mural Project**

Ingrid Chen '03, Caitlin Conboy '03, Merritt Evans '03, Susan Elliott '03, Aimee Kim '03, Margo Lindauer '03, Kathryn Lyslo '03, Elizabeth Minor '03, Rebecca Pfaff '03, Rachel Ropeik '03,

Sarah Schoenbach '03 and Selena Tang '03
 ADVISOR: Weina Zhao, Chinese

The Stone-Davis mural-grid is the outcome of a collaborative process that started in September. Located in the dining hall, the intent of the mural is to add colorful life to a neutral space. The piece explores the connection and flow between the elements: earth, water, air and fire. Made up of individual panels designed with hand-printed paper collage, this project reflects the interplay between student individuality and dorm community. In order to achieve this goal, a core group of students collaborated to create a unifying yet individualized piece, which greets the community as they pass through the dining hall.

Analysis of Literature and the Arts**From Language Learning to Literary Analysis (paper session)****It's All Greek to Us**

Chia-Yin Tu '01, Greek
 ADVISOR: Mary R. Lefkowitz, Classical Studies

Plato's *Symposium* gathers several individuals to speak in praise of Eros. The text's foreign language and its expression of ways of thinking strange to us complicate the challenge of understanding its message. But the inherent biological importance of Eros makes his influence and origin interesting and opens access to notions presented by Plato's speakers. The process of translating and interpreting the original Greek is made difficult by the distance of ancient ideas, vocabulary and behaviors but is encouraged by the presence of steadfast, common tendencies and values. Phaedrus' encomium, for example, attributes the noblest human courage to love's inspiration – an idea that may be familiar from contemporary suggestions in literature and our own experiences. Then, perhaps unfamiliarly, the speakers regarded love as a deity. Phaedrus praises him as one of the oldest gods, and observes that the other gods honor those who demonstrate his inspiration. These are more foreign concep-

tions that, along with the new words that Plato uses to present them, offer a more involved challenge to understanding.

The Dichotomous Nature of the Furies in Aeschylus' Eumenides

Dawne Helena Thorne '01, Greek and English
 ADVISOR: Mary R. Lefkowitz, Classical Studies

In the final play of Aeschylus' Oresteian trilogy, the powerful and blood-thirsty chthonic goddesses known as the Furies, proclaim of themselves, "This is the office that relentless Fate has ordained for us to hold securely when wanton murders of kin come to mortals, we pursue them until they descend below the earth." According to earlier poets, the Furies' responsibilities included the punishment of murderers, the protection of justice and even the maintenance of universal order, but in Aeschylus' *Eumenides*, the Furies are zealously and completely occupied with their role as "avengers of the blood." However, by the end of the play, the Furies are transformed into goddesses who protect life rather than destroy it. By looking at specific passages of the text of *Eumenides*, I will examine Aeschylus' interpretation of the complex nature of these goddesses as agents of both vengeance and justice, social chaos and order, spiritual and familial pollution and purification and, finally, both.

Herodotus' Adaptation of Dramatic Technique in Describing Key Deaths in The History

Elizabeth Johnson '01, Greek and Art History
 ADVISOR: Mary R. Lefkowitz, Classical Studies

Scenes of death – the way in which people die – are important in Greek drama as well as in Herodotus' *The History*. My talk will focus on several short stories in the history that describe the deaths of key figures, comparing these stories both to each other and to death scenes in the dramas of Herodotus' contemporaries and in Homer. In examining the way in which Herodotus leads up to and describes these scenes, I will explore how he appropriates tech-

niques, from epic and drama to write in the genre of history. In my analysis, I will discuss how Herodotus employs these techniques not so much to emphasize the dramatic aspects of these stories, but instead to comment on the workings of fate, the predictability of human nature and the linear progression of events, one leading inevitably to another, throughout history.

Economic Issues

In the Balance (panel)

Weighing International Free Trade against Domestic Protection

Amanda Annese '02, Political Science, Gail Kan '02, International Relations and Psychology, Claire Levy '02, International Relations and Math, Caroline McGregor '01, International Relations, Mae Podesta '02, International Relations, Andrea Saavedra '01, English and Miriam Schiffer '01, International Relations
 ADVISOR: *David L. Lindauer, Economics*

Trade liberalization opens new markets abroad for American producers, whose enthusiasm for free trade diminishes when foreign competition threatens their control of the American domestic market. We will examine four separate international trade cases – in which a domestic industry, faced with what it perceived to be unfair competition from abroad, appealed to the U.S. International Trade Commission for protective measures such as tariffs or quotas to drive the foreign producers out of the U.S. market. Does a victory for the American industry mean a victory for the American consumer? When a domestic industry receives trade protection, is the U.S. as a whole better or worse off?

Gender and Sexuality

Coping to Survive Domination (paper session)

Rape as a Tool in Genocide: The Case of Bosnia-Herzegovina

Jill Brewer '02, Sociology
 ADVISOR: *Thomas Cushman, Sociology*

During the Bosnian genocide, an estimated 20,000 to 50,000 Muslim women were raped

by Serbian soldiers. The majority of the rapes occurred between April and November of 1993. During this time, Serbian perpetrators executed rapes in a systematic manner as an essential tactic of war. Serbian soldiers used rape as a tool against Muslims in their drive for a “Greater Serbia.” Throughout the genocide, the Serbian perpetrators used rape as a tool primarily in five ways: to destroy the Muslim culture and community, to drive Muslims out of Bosnia, to symbolize the defeat of the Muslims, to expand the Serbian race through forced impregnation and to encourage morale among the Serbian soldiers.

The Cognitive Coping Strategies of Battered Korean Immigrant Women

Yeena Yoon '01, Psychology
 ADVISOR: *Linda C. Williams, Stone Center, Wellesley Centers for Women*

Many research studies have examined the numerous structural, cultural and psychological barriers preventing Asian women from leaving an abusive relationship, but little research has investigated the coping mechanisms battered Asian women use. This exploratory study primarily focuses on the significant but silenced community of battered Korean immigrant women and hopes to shed some light on the coping strategies and resources that they employ during the course of domestic violence. Through focus groups of Korean women and interviews with service providers, I anticipate finding certain coping mechanisms: positivism, hope and culturally-accepted values such as fatalism and perseverance. I will address how Korean women stay emotionally and psychologically healthy while enduring violence, how their coping strategies may be culturally bound and how their strategies compare to those of battered Caucasian women. (Research supported by the Morse Fellowship, Stone Center.)

Context of Violence: Domestic Violence and Gender Roles in Japan

Lena Zwarenstejn '01, Political Science and Japanese Studies
 ADVISOR: *James Kodera, Religion*

Last year the Japanese government released statistics reporting the frequency of domestic violence in Japan. Since this

first step has been made, Japan is on the threshold of important decisions that will color the future of domestic violence and intimate gender relations. It is important to understand why the problem has been ignored for such a long time and what has caused such dismissal. This presentation examines gender roles in Japan from a historical perspective, analyzing the forces and/or institutions that perpetuate violence amongst intimates. Confucian principles, the concept of *ie* and traditional gender roles contribute to rigid expectations of women, which prevent women from escaping partner violence. Such background information helps explain the complexities and context of domestic violence within Japan as well as the current and future measures to prevent domestic violence and protect battered women.

The Economics of Same-Sex Marriage (panel)

The Same-Sex Marriage Debate: A Cost-Benefit Analysis

Roya Zahra Rastegar '01, Economics and Women's Studies and Anna Strassmann Mueller '02, Economics and Women's Studies
 ADVISOR: *Corrine Taylor, Economics and Kyle Kauffman, Economics*

Same-sex marriages have long been the subject of debate – especially in the United States. Marriage is assigned a great number of social and legal benefits as well as regulations in order to protect the parties involved. The denial of these benefits to queer people through laws banning same-sex marriage only makes rational economic sense if there is a strong argument on the state's behalf showing an overriding public interest. The economic efficiencies of laws banning same-sex marriages are examined using a cost-benefit analysis. We conclude using this analysis that there are no reasonable economic arguments that can defend laws prohibiting same-sex marriages. Therefore, such laws are due not to rational economic arguments, but rather to discrimination in the form of homophobia. This result is not significantly different from findings of the effects of racism and sexism on wages before civil rights protection banded such forms of discrimination.

Multiculturalism and Diversity

Learning Language through Immersion (panel)

Living and Learning in China (from the Wellesley Classroom to Beijing)

Helen White '03, Chinese Studies, Emily Yu '01, Political Science and Chinese Studies, Tanya Limugsorn '02, Chinese Studies and International Relations, Lyle Pannell '02, Chinese Studies and Women's Studies, Melinda Hwang '03, International Relations, Lena Lo '01, Chinese Studies, Fawn G. Cheng '01, Biological Sciences and Chinese Studies, Fiona Ip '03, International Relations, Natalie Ng '02, Media Arts and Science and Chinese Studies, Charlene Wang '03, International Relations and Multimedia and Sylvie Wald '03
 ADVISOR: *Jing-Heng Ma, Chinese and Weina Zhao, Chinese*

In our presentation, we will discuss the advantages to studying a language in its originating country, as opposed to learning it in the Wellesley classroom. This will include discussing the benefits that studying abroad adds to classroom instruction. The presenters will form a panel consisting of several Wellesley students who studied in Beijing this past June through the Wellesley in Beijing Program. Each student will talk about a particular aspect of studying abroad in Beijing relative to her experience. Such topics to be discussed will include the foreigner's experience in China, societal attitudes and etiquette, Western influence in China, economic changes in everyday China, cultural expectations and misconceptions of Westerners and cultural misperceptions held by Westerners. A question and answer session will follow the presentation.

Political Development

Peace Studies (panel)

Wintersession in India: Grassroots Development, Conflict Resolution and the Gandhian Legacy in India

April Kuehnhoff '01, Peace and Justice Studies and Spanish, Theresa Tribble '01,

Political Science and English, Ellen Joe '01, Peace and Justice Studies, Sophia Dien '02, Psychobiology, Mabel Tso '01, Political Science, Michelle Moy '01, Peace and Justice Studies, Erica Hansen '01, Peace and Justice Studies, Heather Miller '01, Peace and Justice Studies and Africana Studies and Sunita Palekar '03, Peace and Justice Studies and Economics
 ADVISOR: *Victor Kazanjian, Peace and Justice Studies*

The Wintersession in India group will facilitate the creation of a space in which we hope to share our individual and group experience. We will create a framework within which we will discuss what led us to pursue this experience, our time in India and our reflections upon returning to Wellesley. Then we would like to open a dialogue with our guests to explore the dynamics of experiential learning and how it has enhanced our liberal arts education.

Science and Technology

Immunological Innovation (panel)

New Frontiers in Immunological-Based Treatment

Marta A. White '02, Biological Chemistry and Chinese Studies, Avani Patel '01, Biological Chemistry, Tara Ramanathan '01, Biological Chemistry, Bronwen E. Bromberger '01, Biological Chemistry, Melissa de la Rama '01, Biological Sciences and Sonya Panella '01, Biological Sciences
 ADVISOR: *Beverly Blazar, Biological Sciences*

The last decade has seen a stunning increase in the array of treatments for immunologically-based diseases. The immune system has natural barriers to fight off foreign invaders and nonself particles, which are enhanced by modern medicines. Some treatments specifically interrupt pathogen replication. Presentations will provide a survey of advances in several important areas of research including HIV infection, malaria, Epstein-Barr virus, asthma, pregnancy and multiple sclerosis.

Innovations in Computer Technology (paper session)

Exploring the Type Inference Approach to Deforestation

Kirsten Chevalier '01, Computer Science
 ADVISOR: *Franklyn A. Turbak, Computer Science*

Designing programs around the natural decomposition of a problem into modules makes it easier for programmers to write and maintain programs. This principle is known as modularity. Despite the benefits of modularity, it introduces inefficiency into programs, in part due to the creation of intermediate data structures such as lists and trees. Deforestation is a program transformation that eliminates some of these structures, allowing programmers to write modular programs with reckless abandon and still enjoy the efficiency benefits of monolithic programming.

Most existing deforestation algorithms require the input program to be in a restricted form in order to ensure that deforestation occurs. Olaf Chitil has recently developed a type-inference-based algorithm for deforestation, which removes some of these restrictions. Chitil has also developed a prototype that partially implements this algorithm. This prototype requires more development in order to test it on example programs. This year I am working on developing the tools necessary to test the prototype, with the goal of fully implementing Chitil's algorithm. My work will lead to a stronger basis for comparison between different deforestation techniques, and to a better understanding of how deforestation works in practice. (Research supported by a Jerome A. Schiff Fellowship.)

Artificial Intelligence and Game Playing

Jennifer V. Warren '02, Economics and Amy W. Wong '02, Computer Science and Economics
 ADVISOR: *Ellen C. Hildreth, Computer Science*

In the beginning, the artificial intelligence field focused heavily on game playing theory with the belief that the study of the human thought process could be imitated. One of the most famous game playing programs is Deep Blue, the champion chess player, which uses search methods that



include pruning and the minimax strategy. Join us as we introduce you to artificial intelligence and the impact it has made in other fields, such as finance, natural language processing and the medical field. Experience how a simple computer program can imitate the human thought process while playing a game of Connect-4.

Enzymes (poster session)

Involvement of Surface Cysteines in Formation of Multimers and Inactivation of Endopeptidase EC 3.4.24.15

Melissa Sharky '01, Chemistry and Heather Kettenis '01, Biological Chemistry
ADVISOR: Adele J. Wolfson, Chemistry and Jeffrey A. Sigman, Chemistry

The enzyme EC 3.4.24.15 is activated by thiol reagents. There are 14 cysteines in the protein, three of which are thought to be located near the active site. Disulfide bridges involving these three cysteines are believed to block substrate access to the active site. In the presence of thiol reagents, an increase in enzyme activity is observed. A triple mutant, in which the three active site cysteines have been replaced by serines, is 20 times more active than the wildtype. However, we have found that other, possibly surface, cysteine residues are responsible for aggregation and precipitation of the protein. Exhaustive alkylation of the surface cysteines produces wildtype and mutant enzymes ten-fold more active than the unmodified wild-type protein. However, the activity is still lower than that of the unmodified mutant. This implies that optimal activity occurs when the three cysteines near the active site are reduced, while other cysteines are not. (Research supported by HHMI, Dreyfus Foundation and Zimmerman fund.)

Asthma and Adenosine Deaminase Enzyme Therapy: Avenues for Administration

Carrie A. Readal '01, Biology and Psychology
ADVISOR: Martina Königer, Biological Sciences and Michael R. Blackburn, Biochemistry and Molecular Biology, University of Texas-Houston

Adenosine is a signaling molecule that is elevated in the lungs of asthmatics and

has been implicated to play a role in the pathogenesis of this disease. Adenosine deaminase (ADA) is a purine catabolic enzyme that controls adenosine levels. Consequently, ADA-deficient mice develop severe asthma in association with elevated adenosine. Systemic ADA enzyme therapy can prevent severe asthma in this model by lowering adenosine levels. It is not known, however, whether this effect is a consequence of lowering local or systemic levels of adenosine. To address this, both injection and inhalation routes of ADA delivery were compared. It was shown that intranasally administered ADA lowered lung adenosine levels. Furthermore, the intranasally administered ADA remained localized to the lung. This study suggests that inhalation of ADA will be sufficient to produce similar effects as seen with the injection of ADA, only with local effects. (Research supported by a Zimmermann grant.)

The Role of Metal Ions in Enhancing the Activity of EC 3.4.24.15

Shelley Walsh '02, Biological Chemistry and Heather Kettenis '01, Biological Chemistry
ADVISOR: Adele J. Wolfson, Chemistry, Jeffrey A. Sigman, Chemistry

The enzyme EC 3.4.24.15 (EP 24.15) binds and cleaves peptides of 20 amino acids or less. Possible endogenous substrates for the enzyme include bradykinin, gonadotropin releasing hormone and neurotensin. In the laboratory, activity of EP 24.15 is most easily monitored using quenched fluorescent substrates. Previous studies have shown that in the optimal pH range for the enzyme (from 7.0 to 8.0), hydrolysis of substrate is enhanced by the addition of manganese or calcium ions. In an effort to determine the nature of the interaction between the divalent metals, protein and/or substrate, we have determined kinetic parameters for the protein over a wide pH range with and without the addition of Mn(II) and Ca(II). The metals both enhance binding and increase maximal velocity. These observations suggest that the effect of metal ions may be due in part to their substitution for protons involved in binding substrate. (Research

supported by HHMI, Dreyfus Foundation and Zimmerman fund.)

Synthesis (poster session)

Selective Ribosidation of 1,2,4-triazole

Stephanie A. Chan '02, Chemistry
ADVISOR: David R. Haines, Chemistry

The synthesis of a series of potentially biologically active nucleosides involves ribosidation at the N-4 position of 1,2,4-triazole. Our research has focused on developing a methodology for the N-4 ribosidation. When a substituent is added to 1,2,4-triazole, it is placed at the undesired N-1 position. However, we have found that when a second substituent is added to the N-1 substituted 1,2,4-triazole, the second substituent adds at the desired N-4 position. Therefore, we are working on placing a substituent at the N-1 position of 1,2,4-triazole which can be removed at a later step. We then add the ribose group at the desired N-4 position, and remove the substituent at N-1 to obtain our desired product. In addition, an efficient synthesis of the N-1 substituted 1-benzyl-1,2,4-triazole was discovered.

Solution Interactions of 1,2,4-triazolium Ions with Nucleophilic Counter Ions

Megan Chen '01, Biological Chemistry
ADVISOR: David R. Haines, Chemistry

A series of 1,4-disubstituted-1,2,4-triazolium ions, (including 1-benzyl-4-phenyl-1,2,4-triazolium chloride) were made. NMR studies of these compounds indicate that in relatively nonpolar solvents, such as CDCl₃, the choice of the counter ion affects the ¹H-NMR, while in more polar solvents, such as DMSO, the ¹H-NMR is unaffected by the counter ion. One possible interpretation is that in chloroform, there is a covalent interaction between the halogen and phenyl triazole, whereas in DMSO the triazole exists as the triazolium ion. We have studied the structure of these compounds in solution by using ¹³C-¹H NMR coupling constants to determine the hybridization of the triazole carbons and thereby detect covalent interactions between the carbon and the counter ion. The results of these analyses will be presented.

Carbon-Carbon Bond Formation through N1 Substituted and Lithiated Triazole Intermediates

Amanda Doran '01, *Biological Chemistry*
 ADVISOR: David R. Haines, *Chemistry*

Found in all living organisms, nucleosides are a biologically important class of molecules which function in such molecules as ATP and DNA. Several nucleoside analogs are known to exhibit anti-tumor or antiviral activity because of their ability to inhibit biological processes. In order to generate these analogs synthetically, an organic chemist must develop a synthesis that will allow the assembly of a bicyclic structure, creating bonds at specific locations within the molecule. Recent research has focused on the problem of creating these bonds between several alkyl substituents and the C3 position of the starting material, 4-phenyl-1,2,4-triazole. Through this research, we have recently discovered and proven the structure of a novel series of surprisingly stable compounds known as 1-alkyl-4-phenyl-1,2,4-triazolium salts. In addition, a more direct route has been found to selectively alkylate the triazole via lithiation reactions.

Synthesis and Study of a New Class of Antitubercular Agents

Marianne Simone Terrot '01, *Chemistry*
 ADVISOR: Michael J. Hearn, *Chemistry*

Tuberculosis, once one of the most common and most feared diseases, disappeared from the consciousness of most Americans and Europeans after several potent antibiotics were discovered in the 1940s and 1950s. Recently, the emergence of virulent drug-resistant strains of *Mycobacterium tuberculosis* and a sharp increase in the number of cases worldwide have led to the urgent need for the development of newer and more effective drugs. As part of our long-standing interests in the chemistry of organic hydrazines and the chemotherapy of tuberculosis, we have been investigating reliable and reproducible methods for the preparation of tuberculostatic derivatives of acid hydrazides on such a scale and in such purity as to be suitable for subsequent biological evaluation. We have

now found that a variety of acid hydrazides react cleanly with diketones to produce acylamidopyrroles in good yields. The latter compounds represent an interesting and less common class of heterocycles, some of which are isomeric with the demonstrated tuberculostats isonicotinic acid hydrazide and pyrazinamide. Research has focused on the confirmation of product structures, the study of the synthetic reactions by examination of possible intermediates and the evaluation of chemical properties key to tuberculostatic action. (Research supported by a Schiff Fellowship and the National Institute of Allergy and Infectious Diseases of the National Institutes of Health.)

Natural Cycles (poster session)

Evergreen but Never the Same: An Analysis of Seasonal Protein Changes in the Leaves of *Rhododendron maximum*

Valerie Antoine '01, *Biology and African Studies*

ADVISOR: Martina Königer, *Biological Sciences*

The leaves of evergreens such as *Rhododendron maximum* have the ability to survive the incredibly stressful conditions of the winter months in New England. Cold temperatures in combination with high light as well as freezing temperatures can permanently damage the photosynthetic apparatus and the entire leaf. We are only beginning to understand the mechanisms that allow leaves to acclimate to cold climates and to survive these conditions. However, it is clear that changes in protein composition must play a crucial role in the protection of photosynthetic apparatus and the membranes of these leaves. We therefore analyzed the total protein composition of *Rhododendron* leaves harvested at various points throughout the fall and winter. Using 2-dimensional gel electrophoresis, we were able to document and quantify protein changes associated with the acclimation of *Rhododendron maximum* leaves to winter conditions.

Why Do Women Complain about Cold Hands?

Amy Mellgren '01, *Biological Chemistry*
 ADVISOR: Mary D. Coyne, *Biological Sciences*

Temperature regulation is an intricate process influenced by factors that respond to both central and local control mechanisms. In order to enhance our understanding of the role of sex hormones on the balance between heat loss and gain, we have utilized laser Doppler imaging (LDI) as a novel approach for monitoring finger blood flow in women. The fingers are a major site of heat loss and LDI results indicate that there are cyclical changes in finger blood flow throughout the menstrual cycle. The baseline pattern that was observed showed an increasing trend from the luteal phase to the preovulatory phase to the follicular phase and then to menses. A similar, but less pronounced trend was also found in the maximum vasodilation values, which were recorded in response to a major stimulus, i.e., restricting blood flow to the hand. However, this pattern was reversed when the maximum response was corrected for baseline measurements.

Why Can't I Fall Asleep When My Hands and Feet are Cold?

Gabriela J. Reubins '03, *Peace and Justice Studies*

ADVISOR: Mary D. Coyne, *Biological Sciences*

Previous studies have shown that there is a definite increase of finger temperature at night in both men and women and that this rise in temperature is necessary to fall asleep. This is in contrast to changes in core body temperature, which decreases during sleep. In our study, we are addressing questions related to whether sex hormones secreted during the menstrual cycle alter blood flow in the hands and feet, either at night or during the day.

In our initial studies we compared vasodilatation in the fingers during periods of sleep and nonsleep in both male and female subjects. Not only does the temperature of the hands increase during sleep, but there are pulses of vasodilata-

tion seen in both male and female subjects. During sleep, these pulses are greater and of longer duration. In contrast, during wakefulness, the pulses are of shorter duration, of smaller magnitude and more frequent. Our next question was to determine whether the pattern of vasodilatation during sleep and wakefulness varied over the menstrual cycle. We measured core body temperature to indicate the phase of the menstrual cycle along with finger temperature in five female subjects as well as in three control male subjects. There does seem to be a difference in finger temperature in females during the daytime at different phases of the menstrual cycle. (Research was funded by the Fiske Fund. Analysis of data was done under Howard Hughes Minority Mentorship. Work was done in cooperation with U.S. Army Research Institute for Environmental Medicine, Thermal and Mountain Division, Natick, Massachusetts.)

The Circadian Rhythm of Neurogenesis in Juvenile Lobster Brains

Leslie Ann Bagay '01, Biological Sciences
ADVISOR: Barbara S. Beltz, Biological Sciences

Neurogenesis was studied in juvenile lobsters, *Homarus americanus*, during the circadian cycle. Over a 24-hour period, 12 hours of light and 12 hours of dark, patterns of neurogenesis were studied in the proliferation zone of olfactory interneurons (cluster 10 in the lobster brain). Proliferation of cells was monitored by *in vivo* labeling with bromodeoxyuridine (BrdU). Data shows a peak in neurogenesis between the hours of 4:30 P.M. and 7:30 P.M., with dusk occurring at 6 P.M. This trend suggests that there may be a coupling of environmental and endogenous factors in the control of the rhythmicity of neurogenesis. Ongoing studies are being conducted with an altered 24-hour light-dark period, with 6 A.M. becoming dusk and 6 P.M. becoming dawn, in order to see if the rhythmicity is indeed influenced by the light cycle.

Cells and Subcellular Components (poster session)

The Effects of Oxidative Stress Induced by Excess Light on Thylakoid Membrane Proteins in *Arabidopsis thaliana*

Margi Chan '01, Biological Sciences
ADVISOR: Martina Königer, Biological Sciences

The photosynthetic apparatus in plants needs to maintain the delicate balance between maximizing the harvesting of light energy to sustain life processes, and minimizing the amount of reactive oxygen species generated by excess energy at the thylakoid membrane in an oxygen-rich environment. As plants encounter excess light, it triggers a cascade of events at the thylakoid membrane, such as oxidative damage, photoprotection and repair. Much research has been done identifying and analyzing the mechanisms in response to oxidative stress. However, most studies have focused on a few proteins, while very little is known about the magnitude of the global protein changes at a given time point. The focus of my thesis research is to take a "snapshot" of the protein changes induced by oxidative stress by looking at the thylakoid membrane proteins in *Arabidopsis thaliana* using two-dimensional gel electrophoresis. (Research supported by a Wellesley College Office of the Dean of the College grant.)

Restriction Enzyme-Mediated Integration in *Yarrowia lipolytica*

Jeanne Hsu '02, Biological Sciences
ADVISOR: Douglas Brown, Biological Sciences

Yarrowia lipolytica is a dimorphic yeast that replicates by budding or by forming hyphae. Hyphal formation is a characteristic that is typically found in pathogenic yeasts such as *Candida albicans*. In order to isolate mutations in genes involved in hyphal formation for further study, we are adapting the method of restriction enzyme-mediated integration (REMI). This method uses restriction enzymes to insert linearized plasmids into the chromosomal DNA at restriction sites, creating tagged mutations. REMI has previously been successful in other yeasts but has not been tried in *Y. lipolytica*. A variety of

plasmids were transformed into *Yarrowia* strain E122 in the presence of the *Bam*HI enzyme to stimulate restriction enzyme-mediated integration. Both lithium-acetate and electroporation were used to transform E122. Preliminary results show some stimulation in transformation when *Bam*HI is present, suggesting that restriction enzyme-mediated integration events have occurred. (Research supported by grants from Wellesley College and Howard Hughes.)

Expression of the F-actin Binding Protein ZABP2 in *Escherichia coli*

Valerie Wong '01, Biological Chemistry
ADVISOR: T. Kaye Peterman, Biological Sciences

The cytoskeleton of all higher cells plays a central role in a number of essential functions including cellular mobility, transport, communication and division. The protein actin polymerizes to form microfilaments (F-actin) in the cytoskeleton. Actin binding proteins (ABPs) regulate the assembly and organization of F-actin. Plant actin is little studied, and the Peterman laboratory has begun a molecular characterization of the actin cytoskeleton in plant cells. Two novel ABPs were isolated from zucchini, and their genes were cloned. This project endeavors to confirm that the gene identified for the protein ZABP2 encodes a novel plant F-actin binding protein. An expression plasmid will be constructed to contain all of the genetic information required for a bacterial cell to express the ZABP2 gene sequence and produce the corresponding protein. The induced protein will be purified and tested for F-actin binding using an F-actin blot overlay assay.

Isolation and Identification of a Mutant Strain of *Yarrowia lipolytica*

Lesley Wood '01, Biological Sciences
ADVISOR: Douglas Brown, Biological Sciences

Yarrowia lipolytica, a dimorphic yeast discovered to be an opportunistic pathogen, is a distant relative of *Saccharomyces cerevisiae* and *Candida albicans*, another dimorphic yeast. Dimorphism, the ability to grow in either the yeast form or in filamentous form, is

correlated with the ability to cause infection. To study the genes involved in the regulation of filamentous growth, a mutant was isolated using ultra-violet light. The recessive mutant YNF1 is temperature sensitive and unable to form filaments at 30°C, but can at room temperature. The mutant was also tested for filamentous growth on several different media. No hyphae were seen on plates containing fatty acid and glucose. On media supplemented with bovine calf serum or N-acetylglucosamine, filaments were only seen at room temperature not at 30°C. (Research supported by a grant from Wellesley College.)

Self and Identity

Psycho-Social Perceptions (poster session)

Atwood's Creative Protagonists: Survival through Personal Expression

Amy L. Ashbridge '01, *English*
ADVISOR: Kathleen Brogan, *English*

I would like to believe this is a story I'm telling. I need to believe it. I must believe it. Those who can believe that such stories are only stories have a better chance.

If it's a story I'm telling, then I have control over the ending.

As explained by Offred in Margaret Atwood's *The Handmaid's Tale*, storytelling, even to just the individual herself, is a type of power, and therefore control, over a difficult situation. In this novel, Offred's creative self-expression and resulting control comes to serve as an important means of survival and self-preservation. This, however, is not a pattern unique to Offred. Other Atwood characters in her novels and poetry have also relied upon creative means such as art and writing in order to deal with, and then control, their surroundings – all of which results in an attempt at self-preservation. This attempt may be influenced by myriad factors, including the situation in which the character finds herself and the amount of effort that she places in her survival mechanism.

Corporate Attire, Corporate Culture and Perceptions of Job Candidates: A Social Psychology Experiment

Charlotte Boutz '01, *Psychology*,
June Lau '01, *Psychology and*
Rebecca Lam '01, *Psychology*
ADVISOR: R. Steven Schiavo, *Psychology*

We plan to present the results of our final project from our Research Methods in Social Psychology class (Psych 310R, Fall). We collected data from a random sample of Wellesley College students to determine the social perceptions of job candidates based on the interaction effect of corporate attire (traditional or individualized) and corporate culture (traditional or casual). Participants were presented with information about the company and the candidate and asked to fill out a questionnaire as if they were in the role of the interviewer. We hypothesized that the effects of attire would be most pronounced within the traditional culture condition, but that synchronicity between culture and attire would result in the most positive social perceptions. Data analysis using SPSS yielded significant results that we would like to share with the college community, particularly with those students in the job market.

Social Perception of Internet Users and Lonely People

Lin Yee Chan '01, *Psychology*, *Toshie Imada '02, Psychology and Kristina Lawyer '02, Psychology*
ADVISOR: R. Steven Schiavo, *Psychology*

Past research demonstrates that lonely people are perceived by others to have negative personality characteristics. This study examines how the amount of time spent on the Internet affects the social stigma against lonely people. Descriptions of a target male with varying degrees of loneliness and Internet use were given to participants. Participants were then asked to rate their perceptions based on the description. We hypothesized that lonely people with high Internet use would be perceived most negatively, and nonlonely people with low Internet use would be perceived most positively. Our results confirm that lonely people are perceived more negatively than nonlonely people on the dimensions of social desirability, attrac-

tiveness, health and psychological adjustment. On some measures, such as desirability as a friend or an acquaintance, sincerity and ambition, high Internet users were also perceived more negatively than low Internet users.

The Effects of Shyness on Daydreaming Frequency and Content

Lauren Dennis '02, *Psychology and French and Raceel Jarudi '01, Psychology*
ADVISOR: Jonathan Cheek, *Psychology*

Daydreaming frequency and characteristics have both revealed a consistent pattern of association with the basic components and related constructs of shyness. This pattern forms the basis of this study, in which 92 college women completed a packet of questions including the Shyness Syndrome Inventory (Cheek and Melchior, 1985) and part of the Stanford Shyness Survey (Zimbardo, 1977), the Daydreaming Frequency scale of the Imaginal Processes Inventory (Singer and Antrobus, 1970) and a measurement of daydream characteristics known as the Short Imaginal Processes Inventory (Huba et al., 1982). Results indicate that people with higher levels of shyness report a higher frequency of daydreaming on the IPI subscale, more Guilt and Fear-of-Failure Daydreams but not any more Positive-Constructive Daydreams and Poorer Attentional Control on the SIPI test. Findings suggest that daydreams serve shyness through tension reduction and wish-fulfillment strategies. A replication study of 110 subjects is currently being conducted.

What's in It for Me? Education, Motivation and Reward (paper session)

Immunizing Preschool Children against the Negative Effects of Reward on Creativity and Motivation

Marie Giancarlo '01, *Psychology*
ADVISOR: Beth A. Hennessey, *Psychology*

A study was conducted to examine the effect of intrinsic motivation training on preschool children's motivational orientation and creativity in a reward situation. Previous research has shown that the expectation of reward can severely

undermine intrinsic task motivation and qualitative aspects of performance, including creativity. Some investigations have, however, revealed that it may be possible to immunize elementary school children against the negative effects of reward. In the present study, preschoolers were randomly placed in one of two conditions. Children took part in either an intrinsic motivation training session or in a control (no training) session. After these conversations, all children met with a second experimenter who asked them to make a collage. Half of the children made their collage with the expectation of a reward, and half received a prize as an unexpected bonus. Children were then interviewed and asked to rate the collage activity for liking and intrinsic interest. All products were also rated by appropriate judges on creativity, technical skill, liking and aesthetic appeal. Finally, analyses were conducted to determine whether the children exposed to intrinsic motivation training were, in fact, able to maintain baseline levels of task motivation and creativity of performance in an expected reward situation.

Immunizing College Students against the Negative Effects of Extrinsic Constraints

Vanessa L. Greene '01, Psychology and Economics

ADVISOR: *Beth A. Hennessey, Psychology*

Prior research has shown that the imposition of external constraints, such as reward and evaluation, can decrease both intrinsic task motivation and creativity of performance. The present study examines the effect of intrinsic motivation training on college students. The primary question addressed is whether it is possible to immunize students against the usual deleterious effects of expected reward and competition/expected evaluation. Participants took part in either an intrinsic motivation training or control (no training) session utilizing a videotape and group discussion. They were then asked to complete open-ended verbal and artistic tasks, either with the expectation of reward or without the expectation of reward. One week later, in an effort to test the longevity of the training effects,

creativity and task motivation were again assessed using another artistic and verbal task administered under competitive conditions. All products were then rated by appropriate judges on creativity, technical skill, liking and aesthetic appeal following the guidelines outlined in the Consensual Assessment Technique (CAT) (Hennessey and Amabile, 2000). Finally, analyses were conducted to determine whether persons exposed to intrinsic motivation training were successfully immunized against the deleterious effects of extrinsic constraints.

Modernity, Social Inequality and Revenge

Dena Citron '01, Sociology

ADVISOR: *Thomas Cushman, Sociology*

Spread rumors about them? Destroy her property? Beat him up? How do people get even? This is a presentation of my thesis research, which examines how people in different social classes take revenge in modernity. Sociologists view modernity as an outcome of the process of industrialization in which forms of social and cultural life are radically changed. I propose that patterns of revenge-taking are different in the contemporary world than in pre-modernity in terms of space, time, scale, predictability and removal from the body. Modern revenge is less localized, cyclical, ritualized, prescribed and violent. Further, I hypothesize that people's social statuses affect the types of revenge they take. Through extensive interviews, I investigated how people from various social classes engaged in revenge behavior.

Social Institutions and Processes

The Results of Education (paper session)

Choices in the Brain Drain: Interviews with African Health Care Professionals about Their Migration to the West

Jane A. Gwira '01, French Cultural Studies and Premed

ADVISOR: *Jonathan B. Imber, Sociology*

The "Brain Drain" was coined to describe the mass migration of African professionals from their native countries to the

West over the past few decades. My previous study was about doctors who are reversing this trend. This study instead focuses on African health care professionals who have chosen to remain in their host countries. Is there awareness among these professionals that their absence contributes to the Brain Drain? Are their reasons for remaining purely financial, or are they more complex? Are there similarities in the stories they tell, which could help us better understand this sociological phenomenon? "Choices in the Brain Drain" is about these doctors, their lives and the compromises with which they live. It is about the difficult choices they make and continue to make as they live the realities of an African health care professional in the developed world. (Research Supported by Wellesley College Multicultural and Student Research Grants.)

Can Religious Schools Address the Crisis of Education in Pakistan?

Sarah Karim '03, Economics

ADVISOR: *Christopher Candland, Political Science*

Education in South Asia faces many challenges. In an attempt to change this predicament, many not-for-profit groups have mushroomed, including one of the most noticeable in Pakistan: religious institutions, or madaris. Madaris are often started by religious scholars in an attempt to educate children in religious knowledge. Among many scholars, as well as in the Western media, madaris are considered backward institutions that harm, rather than benefit, society. However, on close examination, one finds that this assessment is both inadequate and imprecise.

This presentation will analyze the impact of these madaris on education in Pakistan, and whether they are, or can be, successful in addressing educational needs. In addition, the new interest of the government in these schools will be addressed, highlighting the changing role of religion and religious organizations in the politics of Pakistan. (Research supported by NSF AIRE.)

The World of the Child (paper session)

Preschool Friendships: Distinctions among Reciprocal, Unilateral and Imaginary Friends

Lisa M. Hohmann '01, *Psychology*
ADVISOR: Tracy R. Gleason, *Psychology*

In studying young children's social development, friendships are often identified by asking children to name their friends. Young children, however, frequently do not realize that many of their friendships are unilateral (only one child nominates the other as a friend) rather than reciprocal (two children nominate each other as friends). The distinctions between unilateral and reciprocal friendships, as well as the similarities and differences between real friendships and relationships with imaginary friends, have received little study. These three types of friendship – reciprocal, unilateral and imaginary – theoretically may serve different functions for young children. This study examined these functions using social provisions: characteristics of relationships such as companionship, intimacy and affection. Distinctions were found between the levels of certain provisions received from reciprocal and unilateral friends as well as between reciprocal friends and nonfriends.

A Comparison of Hausa Adult- and Child-Directed Speech

Abigail McDonald '01, *Language Studies*
ADVISOR: Andrea Levitt, *French and Office of the Dean of the College*

Even before they can talk, we engage infants in elaborate conversations. This type of talk, called child-directed speech (CDS), differs from adult-directed speech (ADS) in prosody, syntax and semantics. Higher pitch and wider pitch excursions typify CDS in many languages. One theory suggests that CDS provides crucial information about language structure that helps the child break the speech stream into grammatical units. Not all researchers believe in the universality and utility of CDS. This study examines ADS and CDS in Hausa, a widely spoken West African language. Ten parents were recorded in

semi-structured home observations. Speech samples analyzed for mean F_0 and pitch excursions will document whether Hausa speakers modify their language when addressing infants and whether this variation is similar to the patterns observed in other languages. The addition of Hausa to the list of communities employing CDS would contribute to the debate on its role in language acquisition. (Supported by the Margaret Clapp Class of '30 Distinguished Alumna Professorship and the Jerome A. Schiff Fellowship.)

Picturing Harry Potter: The Effect of Story Illustrations on Children's Imagery

Samantha Roberts '01, *Psychology*
ADVISOR: Beth A. Hennessey, *Psychology*

How do story illustrations affect a child's ability to produce images? Will the imagination of Harry Potter readers be limited by illustrative models? Forty elementary school subjects were randomly assigned to one of two groups. After hearing a taped segment from the Harry Potter series (J.K. Rowling), they were asked to draw what they were picturing in their minds as they were listening to the passage. While listening, one group was shown an illustration depicting the text, while the other group had no model from which to form their images. It is expected that the drawings produced by children who were not shown a sample illustration (Model Absent) will be judged to demonstrate a wider range of variability (in content and composition) than the pictures produced by the other (Model Present) design group. In addition, ratings will be made of the illustrations' creativity, technical quality, degree of realism and aesthetic appeal in order to make further between-group comparisons.

The Arts

Visions of Self (exhibition)

Redefining the Self-Portrait

Alison W. Chang '01, *English and French*
ADVISOR: Judith Black, *Art*

There are few photographs that are more intensely personal than the self-portrait. My self-portraits are an expression of an instantaneous moment in time: a raised eyebrow,

a pleading gaze. I use them to change the way I look at myself and the way I present myself to others. They are a way for me to reassemble myself, piece by piece, shot by shot. By pushing myself, both as an artist and as my own subject, I hope to stretch the boundaries of what one expects from a self-portrait. This grid of images emphasizes the puzzle-like aspect of my work – the reassembling, the recreation, the redefining of self. This is my attempt to capture these pieces of time, these scraps of emotion, on film. (Research funded by a grant from the Office of the Dean of the College.)

Wellesley College Theatre Presents (performance)

Striding Forward, Looking Back: A Theatrical Retrospective

Elizabeth A. Hedstrom '01, *Political Science*, Denise Crooks '01, *Theatre Studies and Women's Studies*, Elizabeth A. Wightman '01, *Theatre Studies and Italian*, Jenny Caplan '01, *Religion and Theatre Studies*, Alexandra R. Swartsel '01, *Political Science and Music*, Robin Olinsky '01, *Theatre Studies*, Christine Valeo '01, *Theatre Studies and English* and Erika L. Reinfeld '01, *Theatre Studies and Astronomy*
ADVISOR: Nora Hussey, *Theatre Studies*

The Wellesley College theatre community is honored to present a theatrical retrospective of the work created in the 2000-2001 season. The cooperative efforts of Nora Hussey, Director of Theatre and Theatre Studies, Katie Griswold, choreographer, Jeanne Munroe, musical director and the 2000-2001 student directors have created a diverse performance piece highlighting this year's shows and thereby showing the importance of history. As in the successful performances of previous years, the emphasis will be on the essence of theatre – the relationship between audience and actor. We present varied productions, illustrating the importance of history in a multitude of ways – taking as example the exuberant wit of *The Musical Comedy Murders of 1940*, the introspective drama of *Joan of Arc or 1776* or the poignant tragedy of *Corpus Christi*. Through this showcase of nine shows, we gain insight into the triumph of the human spirit against all sorts of odds.

Studio Honors (exhibition)**Memory and Body**

Rachelle Dang '01, Studio Art
 ADVISOR: *Phyllis I. McGibbon, Art*

My work in video and performance-drawing examines connections between the body and the desire for memory. I am interested in how visual, spatial and sensory environments create new narrative possibilities and viewing situations for video and film. In this mixed-media work from my thesis research in studio art, the character performs deliberate gesture movements to metaphorically create and speak against the silences of forgetting.

Flush

Erica Goetz '01, Studio Art and Anthropology
 ADVISOR: *Carlos Dorrien, Art and Phyllis I. McGibbon, Art*

This installation, combining sculpture, printmaking and drawing, presents a compilation of our work and a reflection of our experiences working in the same space on our own creations.

Painted Journeys

Kaetlyn Ann Wilcox '01, Studio Art
 ADVISOR: *Elaine Spatz-Rabinowitz, Art and Bunny Harvey, Art*

My paintings arise from a process of visual research and analysis, discovery-making and intuitive response. These works explore technical issues of form, color, composition and light, paint consistency, paint application and invention versus literal representation. Emotionally and intellectually, my work seeks to dignify what often seems like a faceless, mass-produced world, by illuminating the secretly extraordinary nature of ordinary objects.

The Weight of Time

Mie Yoshinaga '01, Studio Art
 ADVISOR: *Phyllis I. McGibbon, Art*

My drawings and intaglio prints explore the spatial relationship between a figure and its surroundings, and how the space is affected by the mass of the body. I have examined this through careful observation of the depth created by light and shadow, by considering Einstein's general theory of relativity, and by abstracting shapes. The work selected for this exhibition also explores the passage of time as a visual element. I am interested in the aesthetic of age and decay as it relates to the process of making an etching.

3:00 – 4:10

About Wellesley**Work at Wellesley (panel)****The Organization and Meaning of Work at Wellesley: Field and Survey Studies of Workers and Work Groups**

Marseille Allen '01, *Sociology*, Ashleigh Arledge '01, *Peace and Justice Studies*, Katherine Brouhard '01, *Sociology*, Laura Feldman '01, *Sociology*, Iris Flannery '02, *Sociology*, Stacey Knapp '01, *Sociology and Alessa Podolak '02, Sociology*
 ADVISOR: Susan Silbey, *Sociology and Joseph Swingle, Quantitative Reasoning*

This panel presents the results of research conducted by students in Social Research Methods on the organization and meaning of work in various offices, work settings and groups in and around Wellesley including food, health and career services, the President's office, campus police, the post office and bus drivers. Students have looked at the ways in which work is organized to avoid boredom, exercise responsibility, maintain boundaries, manage demand for service, comply with as well as resist authority and create a sense of autonomy and satisfaction.

Analysis of Literature and the Arts**Translation's Greatest Challenge (panel)****Between Languages: Issues of Translation in Poetry**

Colleen C. Murphy '03, *Comparative Literature*, Katharine R. S. Freeman '02, *English and American Studies*, Claire Shinkman '01, *Comparative Literature and Theatre Studies* and Barbara T. Skarica '01, *Comparative Literature*
 ADVISOR: Alison Hickey, *English*

This panel will take up various issues that emerge in the translation of poetry. Poems to be discussed include Victor Hugo's *Saison des semailles, le soir*, Pablo Neruda's *Oda a un reloj en la noche*, Paul

Verlaine's *Chanson d'automne* and Federico García Lorca's *La casada infiel*. With reference to these and other texts – including commentaries and theoretical discussions by other translators – we will consider the challenges and rewards of moving between languages and the sacrifices translation often entails. Of particular interest to us are topics such as literal versus poetic translation; the conflicting claims of faithfulness to meaning, imagery, syntax, rhythm, rhyme, punctuation and other poetic features; the problem of the seemingly untranslatable word or image; and cultural and linguistic gaps between languages.

Gender and Sexuality**Living with Gender (poster session)****Was That a Pick-up Line?: The Effect of Mode of Dress and Type of Comment on Perceptions of Flirtation among College Students**

Vivian S. Chang '01, *Psychology*, Sheila M. McCabe '01, *Psychology* and Brooke L. Rogers '01, *Psychology*
 ADVISOR: R. Steven Schiavo, *Psychology*

In this experiment, it was predicted that mode of dress and type of comment would influence perceptions of flirting behavior during initial heterosexual encounters between college students. Based on prior empirical research and casual observation, it was hypothesized that the interaction where a man approaches a "dressed up" woman and refers to having met her at a party is viewed as more flirtatious than a man who approaches a "dressed down" woman and asks for directions to the bathroom. A questionnaire was administered to participants who were randomly assigned to one of four conditions. Results were compared among the four scenarios and significant findings corroborated the initial hypothesis that indeed mode of dress and comment influence perceptions of flirtation.

Gender Differences in Preschoolers' Exercise Play: Activity Preference and Maternal Influence

Mary Ellen Evans '02, *Psychology* and Sarah Cully Mueller '01, *Psychology*
 ADVISOR: Tracy R. Gleason, *Psychology*

This study expands upon earlier research on gender differences in preschoolers' exercise play. The sample included 31 children from a laboratory preschool in a suburban area of the United States. Children were asked to choose between paired photographs of "more active" activities versus "less active" activities. Additionally, the children's mothers completed surveys to provide a measure of maternal attitudes towards and participation in physical activity. The hypothesis was that boys would prefer more physical activities than girls would, and that girls' preferences would be more influenced by their mothers' attitudes towards exercise than would boys' activity choices. Results of the picture task and mother survey did not support either hypothesis. On the picture task, girls chose active objects more often than boys, but the difference was not significant. The mothers' activity levels, as indicated by their responses on the survey, did not relate to the activity levels of their children. Furthermore, there was no interaction between gender and mother's activity level as predictors of child's activity preference. These results suggest that the pattern of maternal differential reinforcement for their children's physical activity is not universal or perhaps does not exist.

Impression Formation Based on Social Radiation Effects in Romantic Relationships

Kristen Fay '02, *Psychology and Spanish*, Christina Lau '02, *Psychology and Women's Studies*, Allison Price '02, *Psychology* and Meg Steiner '01, *Psychology*
 ADVISOR: R. Steven Schiavo, *Psychology*

Forty-eight undergraduate women viewed one of two photographs and one of two resumes of the male companion of a target

female. Resumes and photographs of the male were manipulated to show either high or low levels of success/grooming. The target female's resume and photograph remained constant. The two were depicted as being involved in a romantic relationship. The results indicated that the manipulation of success was the determining factor in how the target female was perceived. When paired with a high success male companion in either grooming category, the female was perceived less self-confident, less intelligent and less successful than when paired with a low success male partner. However, the male's high success positively radiated to perceptions of the female target as more socially aware and approachable. Participants rated the relationship more positively (i.e., longevity and mutual partnership) when the male companion had high levels of success.

The Wendy Factor

Jennie Seeg '01, *Psychology*

ADVISOR: Julie K. Norem, *Psychology*

Research has found that the activation of an in-group stereotype can have powerful influences on performance and self-perception. Flashing words subliminally can "prime" stereotypes. The purpose of this study is to measure the influence of the "Wendy" factor, or Wendy Wellesley stereotype. Wendy Wellesley refers to the stereotypes of Wellesley women: e.g., driven, overachievers and perfectionists. Wellesley participants were subliminally primed with the Wendy stereotype or descriptions of the fall season via the computer program Psychlab. After being primed, the experimental and control groups' scores on a variety of measures were compared to determine if participants primed for the Wendy stereotype became more perfectionistic, academically motivated or remembered more words than those primed with control descriptors. The data suggests that those primed with the Wendy stereotype experienced higher parental expectations, were more perfectionistic and remembered more words on a memory task than the control group.

Gender in Cultural Context (paper session)

Picking Teams: Sex Role Conflict in Female Athletes

Regan Bernhard '01, *Psychology and Spanish*

ADVISOR: Julie K. Norem, *Psychology*

Throughout history, athletics has been considered a masculine pastime. Even today, participation in athletics requires adoption of traditional masculine behaviors and roles, as athletes are expected to be competitive, aggressive and active. Females who strongly identify as athletes must, at least while participating in their sports, embody these traditionally masculine characteristics. At the same time, they may feel pressure to behave in a traditionally feminine manner. This project examines the relationships among female athletic participation, psychological sex role and role conflict and how these associations may differ at single-sex and coeducational colleges.

The Role, Constructs and Effects of Black Humor in *American Psycho* (novel and film)

Lara Zaroulis '01, *English*

ADVISOR: Vernon Shetley, *English*

In my presentation I will explore the constructs of black humor in both the novel and film adaptation of *American Psycho*. Specifically, I will compare the realization of black humor in a scene from the novel and its corresponding scene in the film. My talk will include a brief theoretical discussion of the role, use and history of black humor. I will address the critical beating that *American Psycho* has sustained (mainly because critics feel it is a celebration of senseless violence). My hope is that my discussion of the critical literature regarding *American Psycho* will show that most critics have misunderstood Ellis's metaphorical and satirical use of violence. Ellis's work is an investigation of the impact of an extreme capitalist mentality on treatments of the body, sexuality and the physical self. Black humor is a necessary strategy in Ellis's attempt to measure and represent the dehumanizing effects of capitalism.

Multiculturalism and Diversity

Cultural Adaptations (paper session)

Asian American Achievement Differences: A Look at Four Subgroups

Karlo Ng '02, *Urban Studies and Public Policy*

ADVISOR: Barbara Beatty, *Education*

As an aggregate, Asian Americans are reported as an academically high-achieving racial minority group. This generalization has resulted in such phenomena as "the model minority myth." In reality, there are Asian subgroups in the United States that are performing poorly in schools and are often overlooked. This study explores the factors that contribute to intra-group achievement differences among Asian Americans. We will take a look at two typically high-achieving Asian subgroups (the Chinese and Japanese) and two typically low-achieving Asian subgroups (the Vietnamese and the Hmong) and examine historical, social and cultural factors that contribute to group and individual academic success and failure.

Dead Space to Community Place: The Lessons of Two Vernacular Architecture Projects in Houston and New York

Kathryn E. O'Rourke '02, *Architecture and English*

ADVISOR: Alice T. Friedman, *Art*

With an interest in the vital role of architecture, landscape and place creation in shaping the life and character of a neighborhood, and in forming individual and cultural identity, this paper considers the impact of two urban projects that integrate art, architecture and community revitalization. Project Row Houses in Houston and the casitas of New York City are different attempts at physical and social change in an urban environment. They offer important lessons for architects, planners and politicians who seek to affect change in some of the most depressed communities in the United States. Project Row Houses, the result of the vision of artist Rick Lowe, is a series of 22 shotgun houses that have been renovated and put to new use in Houston's Third Ward, a predominately

African American, low-income community. Dilapidated and essentially abandoned when he first saw them, the houses have been transformed, through volunteer efforts and private donations, into installation art spaces, houses for young single mothers and classrooms for children. Building on the vision of the African American community portrayed in the work of painter John Biggers, Lowe's combination of art, housing and enrichment programming for local children is unique and successful. The casitas of New York are small, wooden, brightly painted houses that function as community centers in the Lower East Side, East Harlem, the South Bronx and Brooklyn. They closely resemble domestic vernacular architecture of Puerto Rico and have been built by Puerto Rican immigrants. They are usually accompanied by a garden and are on lots owned by the city but that have been functionally abandoned and left to go to waste. Each casita is different, but all are maintained by the casita members who come from the neighborhood, and in some cases distant neighborhoods, to use them. Many casitas and gardens have been lost to development and many more are threatened as real estate values, particularly in the Lower East Side, escalate. This paper examines the lessons of Project Row Houses and the casitas from an architectural and urban planning standpoint. Among the issues considered are the link between place and cultural identity, the importance of nature in an urban setting, the role of art in people's lives and the need for diversity in an urban landscape. The project includes information gained from site visits and interviews in Houston and throughout New York, as well as readings in the architectural history of the pertinent forms, urban theory and planning and environmental psychology. (Research supported by the Student Multicultural Summer Research Program.)

Assimilation vs. Integration: Conflicting Goals for North African Muslims in France

Mariah Levin '03

ADVISOR: *Candelario Saenz, Anthropology*

In-depth, face-to-face interviews conducted recently with North Africans in France

and their French counterparts provide an opportunity to observe a "merging of cultures" at work, as North African Muslims challenge the structure of French secular society. Though the French describe themselves as accepting of their North African neighbors and tolerant of their customs and beliefs, in fact, these sentiments are rarely in evidence. From their perspective, in order to prosper, these newcomers must embrace French customs and ideals. Indeed, the French express little or no interest in adapting, even passively, to "Muslim ways." While the North Africans are convinced that conforming to French culture "in its entirety" is the only strategy whereby they can avoid being "ghettoized," they appear unwilling to sacrifice even minor Islamic customs and surround themselves almost exclusively with those of their own immigrant group. Thus a true "cultural exchange," though a worthy goal, remains an elusive one.

From the Child's Point of View: The Relationship between Family Culture and Academics for Hispanic and White Children

Stephanie Morales '02, Anthropology and Education

ADVISOR: *Kenneth Hawes, Education*

Several researchers have studied ethnicity as an explanation of why students perform differently in schools and on standardized tests. The goal of my project was to determine whether the different family cultures children grow up with, have a direct effect on how they view academics and how they perform in school. To study this, I interviewed fifth-grade students from different schools throughout El Paso, Texas. Approximately 80 students identified as either Hispanic or white participated in the 10-15 minute interviews. Worth noting are the children's responses regarding support, expectations and positive and negative role models. There were no clear distinctions between how children from each ethnic group responded. My project explains how I came to see the importance of looking at the whole child and how this can change the way we look at education. (Research supported by the Student Multicultural Research Program, Office of the Dean of the College.)

Political Development

Rhetoric, Propaganda and International Intervention (paper session)

Examining Western Apologists for Soviet Communism

Charlotte Boutz '01, Psychology and Charlotte Cooper '02, Cognitive Science
ADVISOR: *Thomas Cushman, Sociology*

For numerous Western intellectuals, Soviet Communism represented the manifestation of Marxist ideals; but they often failed to recognize the disparity between the intellectual Marxism they cherished and the terror that Leninism and Stalinism wrought. Estimates of deaths in the USSR from executions, forced relocations, planned famines and brutal work camps exceed 20 million people and, for some, constitute genocide. Yet many intellectuals denied, excused or otherwise justified the USSR's tactics in an effort to preserve Marxist ideology. The later works of prominent labor historians Sidney and Beatrice Webb are a case study in Communist apologetics. Webb's case exemplifies a potential danger with "arm-chair utopia-seekers" who attempt to use their prestige to support political movements. It serves as a reminder that empathy for social suffering should be at the forefront of academic consciousness.

Refugee and International Relations: The Case of Algerian Refugees during the Algerian War for Independence

Amy Thayer '01, History and Political Science

ADVISOR: *Wilfrid Rollman, History*

Through an analysis of the refugee crisis during the Algerian war for independence, the case will be made that refugees are an integral part of international relations. The Algerian situation will be used to illustrate how refugees can influence international politics and conflicts, how governments can use a refugee problem to affect their own foreign policy goals and how foreign governments can use foreign aid, especially in this case, refugee assistance, to achieve diplomatic aims that would be difficult if not impossible to



achieve by other means. The political neutrality of refugee relief organizations will also be discussed.

The Rhetoric of Indifference in International Intervention

Charlene Wang '03, International Relations and Multimedia

ADVISOR: *Thomas Cushman, Sociology*

This research project, funded by the National Science Foundation's Awards for the Integration of Research and Education Program (NSF AIRE), explores the patterns and structure of arguments that were used by various organizations to influence nonintervention during World War I, World War II and the war in the former Yugoslavia. The rhetoric of published articles and editorials, speeches, sermons and other sources is presented in order to show how parties with different ideological persuasions often used the same arguments to dissuade America from entering the war. While the more broad research project focuses on three cases, this presentation focuses on the arguments for non-intervention in World War I.

Science and Technology

Humans Influence the Environment and Vice Versa (paper session)

Determining the Human Source of the Most Potent Greenhouse Gas: SF₆CF₃

Elizabeth Eideann Ferrenz '01, Chemistry
ADVISOR: *Christopher R. Arumainayagam, Chemistry*

Understanding the formation of Trifluoromethylsulfur pentafluoride (SF₆CF₃) is important because it is the most efficient greenhouse gas on a per molecule basis (18,000 times more potent than CO₂). Since SF₆ and fluoropolymers are used together in high voltage environments, it has been postulated that SF₆CF₃ is a product of the reaction between •SF₅ and •CF₃ radicals. Our experimental procedure involves low-energy (< 50 eV) electron irradiation of nanoscale thin films (~ 10Å thickness) of CF₃I and SF₆Cl grown at 100 K on a molybdenum single

crystal in an ultrahigh vacuum chamber (p ~ 5 x 10⁻¹¹ Torr). Confirmation of •CF₃ radical production during electron irradiation of CF₃I thin films has already been obtained. Upon electron irradiation of SF₆Cl thin films, •SF₅ and •SF₂ radical formation has been observed. Once we establish •SF₅ radical production, we will probe the electron-induced reactions in mixed multilayers of the two reactant gases CF₃I and SF₆Cl. If we are successful in producing SF₆CF₃, our findings will suggest that it is the low-energy secondary electrons found in high-voltage environments that initiate the reactions leading to SF₆CF₃ greenhouse gas formation. (Research supported by a Schiff Fellowship.)

Long-Term Fate of Heavy Metals in Sediments of a Massachusetts Salt Marsh

Adena Greenbaum '01, Environmental Science

ADVISOR: *Marianne Moore, Biological Sciences and Anne Giblin, Marine Biological Laboratory, Woods Hole, MA*

This study concentrates on the long-term fate of several heavy metals (Pb, Cr, Cu, Cd, Mn, Zn and Fe) in a Cape Cod salt marsh which received high inputs of heavy metals from a sewage sludge-based fertilizer for the last 27 years. Although salt marshes are thought to be an effective sink for heavy metals, the long-term fate of metal pollutants in marsh sediments has not been well documented. Their effectiveness as a potential natural "clean-up" site for metals needs to be evaluated. To better understand the fate of heavy metals in marsh sediment, I am evaluating the current concentration and location of heavy metals in the sediments of Great Sippewissett Marsh and comparing my data to those collected from 1976-1980. Most metals are retained in highest concentration 8-10 cm. below the surface, although there are significant differences between high marsh and low marsh areas. Although current metal levels are higher than they were 20 years ago, the marsh appears to lose significant quantities of added metals.

Self-Referential Art (panel/exhibition)

Versailles 2001: Interactive Photokinetic Sculpture for the New Millennium

Larissa J. Ranbom '02, Cognitive Science, Amy L. Ashbridge '01, English, Emily A. Braunstein '01, Computer Science, Kirsten Chevalier '01, Computer Science, Alexandra Dunne-Bryant '02, Latin and Greek, Leslie E. Gibson '04, Jennifer L. L. Hanson '01, Biological Sciences, Elizabeth A. Murphy '03, Art History and Medieval and Renaissance Studies, Kathryn A. Odiome '01, Physics and Astronomy, Sheree M. Schrager '02, Mathematics and Psychology, Marianne Simone Terrot '01, Chemistry, Carla J. Weiss '03, Political Science and Emily R. Wilson '01, Art History

ADVISOR: *Franklyn A. Turbak, Computer Science*

The technological landscape at the end of the twentieth century provides the world of art with new challenges and inspirations. Art cannot exist in a vacuum, but must be shaped by the innovation and inspiration of technology, and, in turn, technology must take cues from art. In this multisensory compilation of art and technology, we erase the distinction between art, artist and spectator, as all three interact in infinite feedback loops of creation. The self-referential nature of this technological *objet d'art* enables a melding of the exhibit with the spectator: art constructed from mundane objects, and presented in an unexpected setting is so shocking that the spectator initially perceives the exhibit as commenting only on itself. Only after this first impression is made can the deeper meaning of the art be contemplated, investigating the ways in which multimedia interfaces, as we enter the twenty-first century, with our daily lives and fosters artistic expression. This project is an attempt to examine the role that emerging technologies will play in the ever-changing world of art and how we must embrace these permutations to accurately reflect our society's values and ideals.

The Art and the Science of Multimedia (exhibition)

Journey to the Sun

Karen K. Liu '02, *Computer Science and Economics* and Ena Kim '01, *Sociology and Art*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

"Journey to the Sun" is an interactive CD-ROM about rave culture. The rave/ techno music genre is not only about the music itself but also about the pop culture that follows it. There is a new underground generation called ravers that have their own fashion, style, night-life and society. This program will take you into a "rave," where you will be able to explore the different aspects of this culture. The program will be geared mostly to entertain but also to be informative to those who know little or nothing about rave.

Mind Benders

Karyn Y. Lu '01, *English* and Lin Hsu '01, *Computer Science and Math*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

Mind Benders are a concoction of puzzles to challenge your mind. Come test your problem-solving skills with this highly engaging and interactive game, and learn how we put together this mixture of riddles, puzzles and games that is sure to be fun for both the puzzle novice and expert.

Imaginings

Jee-Hee Yoon '01, *Architecture and Economics* and Tuyet Nguyen '01, *Studio Art*
ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

Imaginings is an experiential and educational CD-ROM on lucid dreaming. Lucid dreaming is "dreaming while you know that you are dreaming." This state of consciousness allows a person to control his/her dream and to experience anything imaginable. Though we cannot directly induce lucid dreaming, this CD-ROM, geared towards audiences age 12 and over, attempts to give a sense of what lucid dreaming may be like. Also included will be the history and research behind lucid dreaming, as well as how to use lucid dreaming to understand oneself better.

Shaken and Stirred

Cassandra Hamilton '01, *Film/Media Studies and Italian* and Natalie Ng '02, *Chinese Studies and Media Arts and Sciences*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

An instructional guide to mixing, shaking and stirring sophisticated cocktails, with additional advice to enhance your drinking experience.

East Meets Space

Weili Zhang '02, *Biological Chemistry and Computer Science* and Chien-Na (Tina)

Wong '03, *Media Arts and French*
ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

An alien explores traditional Chinese and Japanese foods in an interactive setting in a program for children ages 8-14. The tour includes stories and facts about the different foods and games related to the foods.

Sand of the Hourglass

Erin Stadler '03, *Media Arts* and Jess Charlap '03, *Architecture and Multimedia*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

This project will use an interactive program about different media of fortune telling. Using an interactive program that explores different media of fortune telling, the user can choose to experience a specific medium or learn about its history in a room designed around the culture to which the medium belongs. The program will feature a central room with instructions, an exit option and doorways to the other rooms. The theme of the central room and of the program in general will be an hourglass and the way it represents the passage of time.

Peter and the Wolf

Erika O. Symmonds '02, *Computer Science and Studio Art* and Anna Haas-Barluschke '01, *Film and Visual Arts*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

The music and story of Prokofiev's *Peter and the Wolf* has been a children's classic since its first recording in 1930s. In our project, we tell the story of Peter and the Wolf with our personal touch of animation

and fun. Using the power of multimedia tools, we present the story, the history, the instruments and the characters in order to foster an appreciation of music and to make the story even more interesting for the young reader who no longer uses vinyl records but CD-ROMs.

Dining Dynamics

Julie Weber '03, *Math and Computer Science* and Shadia Malik '03, *Multimedia and Psychology*

ADVISOR: P. Takis Metaxas, *Computer Science and Naomi Ribner, Art*

Wellesley College Dining Services have much to offer to Wellesley students. Often people are not properly informed of what the food service staff has to offer. This is an interactive food service CD-ROM for the Wellesley College community that will be geared towards incoming first years. In an entertaining manner, the CD-ROM will inform Wellesley first years about the college's dining halls, their locations, appearance, services and opportunities. It will also provide other information, including menus and nutrition ratings.

Social Institutions and Processes

The Right to Choose: School Vouchers (paper session)

The Politics of School Choice: The Unusual Coalitions of the Voucher Movement

Ella Gao '01, *Political Science*

ADVISOR: Jeff Gulati, *Political Science* and Barbara Beatty, *Education*

Vouchers have become one solution offered to improve what many Americans believe are failing public schools. Indeed, they are an increasingly popular form of education reform. Michigan and California placed the issue of vouchers on ballot proposals this past fall. Texas, New Mexico, New Jersey, Pennsylvania and Arizona have either considered vouchers or are considering vouchers in some form. Despite its popularity, however, vouchers are actually instituted in only three areas in the United States. If vouchers are so popular, then why are they not passing in state legislatures and referendums? One

answer lies in the disparate collection of forces that support vouchers and the more cohesive group that opposes them.

Does the Inclusion of Special Education Students in Regular Classrooms Affect the Performance of Nonspecial Education Students?

Laura L. Hochla '01, English and Economics

ADVISOR: *Corrine Taylor, Economics*

Does the presence of special needs students in a classroom benefit nonspecial needs children due to the allotment of better resources in inclusive classroom? Does the inclusion hinder nonspecial needs students because teacher attention is focussed on those with special needs? Using the Massachusetts Comprehensive Assessment System (MCAS) scores for the elementary schools in the state as a measure of fourth graders' performance, this project applies multiple regression analysis to estimate the effect of including special needs students on nonspecial needs students' performance.

The Political Prospects for Charter School Reform

Katie Mozer '01, Political Science

ADVISOR: *Alan Schechter, Political Science*

Charter schools sponsored by private businesses, teachers or parents play a major role in the reform of public education. Since 1991 over 1400 of these schools have opened in the United States. Not only must charter school advocates convince states to pass charter school laws, but they must also convince states to pass "strong" laws that encourage the expansion of the charter school movement. Quantitative research demonstrates that the factors influencing the passage of charter school legislation differ significantly from the factors influencing the strength of the law that is passed. Quantitative research also demonstrates that multiple political and demographic variables influence both the passage and strength of charter school legislation. Qualitative research, in the form of interviews of legislators and education activists, confirms these conclusions. These results have important implications for the success of the Charter School Movement. (Research supported by a Schiff Fellowship.)

New Media and Social Change (paper session/film)

Social Theories of Modernity and the Rise of Visual Culture

Marsha Botros '02, Cinema and Media Studies and Psychology

ADVISOR: *Thomas Cushman, Sociology*

In the last century, the rise of film and visual communication gave rise to a new culture of consumerism and new attitudes of revolt against tradition. These cultural transformations are examined according to various theories of modernity that examine the public's fascination with change, novelty and visual culture (especially popular culture). The fascination with consumer goods and an increasing reverence for popular cultural idols was a central concern of a group of sociologists who are known collectively as the Frankfurt School of Critical Theory. The Frankfurt School represented an attempt to reconstitute Marxism in light of the horrors of World War I and the rise of fascism in Europe. They viewed the rise of popular culture as a new form of domination. As a means to liberation, Frankfurt School theorists implored audiences to interrogate rather than passively accept visual culture and to view mass culture critically as a new instrument of cultural domination and enslavement. This presentation offers a discussion of the similarities and differences among Frankfurt School theorists of culture and mass media and presents applications of their work to contemporary examples.

Voices against Violence

Nicole Sanderson '01, History

ADVISOR: *Nancy Salzer, Visiting Professor of Art*

Two years after the school shootings in Columbine and nearly a year after the Million Mom March, the issue of gun control has ceased to preoccupy the American public. Now, when we hear about another shooting, most of us will simply change the channel or turn the page. We forget that for victims of gun violence and their families, these incidents are not so easy to ignore. Many of us also forget that these victims are not just names or faces in the news, but our neighbors, our coworkers and our friends. Fortunately, there are

those who have chosen to remember. In my own community, members of a group called New Yorkers Against Gun Violence have dedicated themselves to providing gun safety education and pushing for sensible gun legislation in New York State. This film is about how individuals become activists, and how ordinary men and women are fighting to force our communities and our legislators to address the growing epidemic of gun violence in our state and in our country.

Pat Robertson: Challenge and Controversy – Christian Fundamentalism and Politics in the United States

Angela Tarango '01, Religion and History

ADVISOR: *Barbara Geller, Religion*

I plan to explore the leadership and work of Pat Robertson in the North American Christian fundamentalist movement and in the United States religious and political arenas. I shall present background information on the Christian fundamentalist movement in order to contextualize Robertson's role within it as well as in U.S. politics. Today Robertson's name has become virtually synonymous with the "Christian Right." He is also strongly associated with dispensational premillennial theology, commonly known as "end-time" theology. I shall examine Robertson's writings to identify the theological views embedded in them. I shall also discuss the ways in which he fuses religion and politics, including his pioneering use of radio, television and the Internet as vehicles to promulgate his beliefs and political goals.

Holocaust Denial on the Internet

Leila Toplic '01, Peace and Justice Studies and Media Arts and Sciences

ADVISOR: *Thomas Cushman, Sociology*

During its rise to power, the Nazi Party created various written, audio and video materials including magazines, radio and TV shows and films. Forty-five years after their defeat and condemnation by the international community, Nazi ideology continues to have a following around the world. As mass media and communication technologies have advanced, various neo-Nazi groups have invested great efforts into promulgating Nazi ideology. The

development of the Internet has served as a new engine for the production and dissemination of Holocaust denial, anti-Semitism and the politics of hate. The Internet has allowed such groups not only to spread their ideology but also to increase membership, intimidate their “enemies” and market and sell their merchandise. This presentation explores the emergence of this powerful new electronic “community of hate” and examines various responses to it.

Aspects of Academe, Literature and the Arts (poster session)

The Economics of the Performing Arts

Morgan Russell '01, Economics

ADVISOR: *Corrine Taylor, Economics*

The Economics of the Performing Arts considers economic issues involved in the production and consumption of live music, theater, dance, musical theater and opera. This study focuses primarily on the organization and structure of the nonprofit sector of this industry. Questions are addressed such as: How can we classify the public/private nature of these intangible goods? What is the role of philanthropy in subsidizing these arts? What are the economic justifications for the government’s role in promoting the production of the performing arts? What causes the “cost disease” that plagues the production of performing arts? This study also addresses the economic decision-making that goes on behind both the production and consumption of the performing arts.

Explaining Human Rights Discourse in the Social Sciences: The Cases of Sociology, Anthropology and Political Science

Jennifer Wilking '01, Political Science

ADVISOR: *Thomas Cushman, Sociology*

This study explains how the topic of human rights has been examined historically within the academic disciplines of sociology, anthropology and political science. My research has shown that the major journals in each discipline, from 1948 to the present, exhibit great diversity in the approaches of the three social sciences to human rights. Sociology did not substantively approach the topic, work in

anthropology was limited to the debate between universalism and relativism, while the approach of political science was initially a reaction to international law, and later became diversified. Sociologist Pierre Bourdieu theorizes that academic disciplines generate their own patterns of socialization and habituation of actors. This socialization and habituation is conditioned by the habitus. Examination of the history of each of the three disciplines helps us to understand how the habitus of each field conditions the behavior of the disciplines in regard to human rights.

Children’s Literature in the United States, 1750-2000

Margaret Barao '01, History

ADVISOR: *Barbara Brenzel, Education*

From nursery rhymes to textbooks, there is a wide range of literature that has been created for the children of the United States. The history of this nation can be traced in the books provided for use in schools and recreation. With the use of the Wellesley College printing press, the culmination of this project will be an actual book, based on themes commonly found in children’s books. It will demonstrate accuracy both in content and appearance.

The Arts

A Limited Edition (exhibition)

Never Done: A Collaborative Book on the Theme of Women’s Work

Anne W. Hennessy '01, Medieval/Renaissance Studies and Amanda M. Zoellner '03, Geology and German

ADVISOR: *Ruth Rogers, Special Collections Librarian*

During the fall of 2000, 11 women investigated the history and production of the book through Book Arts (ARTS 107). Instructed by Ruth Rogers, special collections librarian, and Katherine McCannless-Ruffin, visiting instructor in the book arts, we collaboratively selected (or wrote) text, designed images, hand set movable type, printed folios on a Vandercook press and bound an edition of 34 copies of *Never Done*, an accordion book on the

theme of women’s work. Students worked alone or in pairs to design a folio, some of which contain original poetry, drawings, photography, origami and even sewing. We explored and experimented with type-faces, color and image production techniques including Gocco press prints, stenciling and Adobe Photoshop. The finished folios range in topic from the work of women at Wellesley to the traditional definition of women’s work. The book itself represents the culmination of an entire semester’s efforts and is a project of which we are very proud.

A Celebration of Twentieth-Century Music (performance)

A Break with Tradition: A Celebration of Twentieth-Century Music! Sextet for Piano and Winds, by Francis Poulenc; Selections from Songs to American Poetry, by Ned Rorem and Other Compositions

Emily Filpi '01, Psychology, Sarah J. Gilbert '02, Individual Peace Studies, Deborah A. Hayden '03, Latin and French, Anna Nousek '03, Biology and Music, Isabelle Plaster, Music Faculty, Karen Sauer, Music Department Accompanist, Tyler Wellensiek '01, Physics and Nita Vivatrat '02, Music

ADVISOR: *Isabelle Plaster, Music*

“The essence of great music...is to do the unexpected instead of the routine,” states Paul Henry Lang. The music of the twentieth century rebelled against the constricting models of the “traditional” music of earlier centuries. This new music was shocking to audiences and mirrored the violent upheaval of the times, displaying a vastly different emotional intensity than the music of earlier centuries. While this “new” music is created from the same basic compositional elements, it shatters traditional conceptions of these elements through their non-conventional usage. According to Aaron Copland, the music of the twentieth century “possessed a magical and evocative power” that had never been felt before. This power evokes an intense emotional response from the audience. Come celebrate with us and take a “break” from tradition!

4:30 – 5:40

Analysis of Literature and the Arts**Studies in Translation
(paper session)****Remolding Russian Poetry: Problems of Poetic Translation and Some Solutions***Minh-Han Pham '01, Russian Language and Literature and Economics*ADVISOR: *Ludmila Lavine, Russian*

“Remolding Russian Poetry” is an attempt to elucidate and overcome the problems of making Russian poetry understandable to an English-speaking audience. Poetry, as a medium, encounters unique problems when it is translated because of its inherent formal and acoustic constraints. Rhyme and meter continue to be integral parts of Russian poetry throughout the twentieth century, long after English-language poetry dismisses these concerns. This emphasis on form, perhaps due to the innate rhyming structure of the Russian language, puts severe constraints on the translator of Russian poetry. I look at what aspects can be discarded, if at all, in a translation, and also suggest methods of adding to the original in order to enhance the poetic experience. I will make use of multimedia devices to transform the reader into a viewer, engaging sight and hearing by juxtaposing Russian and English renderings of selected poetry, conjoined with well-known classical Russian music. My subjects will be the poems of Anna Akhmatova and Marina Tsvetaeva that are especially dependent on melody and sound. In conclusion, I will also address the question of why one poet is more popularly translated than the other.

A Few Words in the Mother Tongue (Mame Loshn): Language Lessons in the Work of Yiddish American Poet Irena Klepfisz*“Language is the Only Homeland”*
Czselow Milosz*Andrea Saavedra '01, English*ADVISOR: *Lawrence Rosenwald, English*

In her book of poems, *A Few Words in the Mother Tongue*, Yiddish American poet

Irena Klepfisz translates yidishkayt, or Judaism, for her American audience by employing methods of language instruction. Klepfisz creates a dictionary of Yiddish terms within her poetry, revealing the resiliency of a language that has resisted the internal collapse of assimilation and survived the external destruction of the Holocaust. Klepfisz, like many other contemporary multilingual American poets, invites audiences to participate in her linguistic reality by weaving both English and her home language (Yiddish) throughout the fabric of her poetry. Unlike other American multilingual poets of her generation, like Chicana poet Gloria Anzaldúa, Klepfisz does not seek or require majority recognition to legitimize her use of language. Rather, Klepfisz calls for acknowledgement of Yiddish history and its place in the literary genre of American multilingual poetry.

A Crisis of Responsibility: Translating Jean-Paul Sartre’s *Les Mouches* for the Theater*Claire Shinkman '01, Theatre Studies and Comparative Literature*ADVISOR: *Catherine Masson, French*

Jean-Paul Sartre’s play *Les Mouches* (“The Flies”) is an exploration of existentialism and social contract, set against the familiar backdrop of Greek tragedy. Just as the hero and heroine, Orestes and Electra, struggle with the burden of responsibility, so too must the translator maintain a delicate balance of responsibility. In order to produce a viable, lively and above all performable translation of the play, sacrifices must be made in order to keep the text as immediate and relevant to a modern audience as it was to Sartre’s theatergoers. But although our political, social and moral climates may be different from those of post-World War II France, the translator carries an obligation to Sartre’s message – a message that is still as shocking now as it was 50 years ago. The actual process of translation – pure text work combined with theater workshopping – aided in resolving this crisis of a dual responsibility.

Economic Issues**Crossing Borders (paper session)****Chicken-and-Egg: Trade and Technological Change?***Christine Boyoung Kim '01, Economics and Political Science*ADVISOR: *Daniel K. Johnson, Economics*

While economists have actively explored the ways in which technological change affects international trade, theory suggests that international trade may in turn affect the incentives and opportunities to innovate. Since openness to international trade may promote domestic innovation for foreign markets, as well as technology transfer from abroad, there are important policy implications including the potential impact on growth. Using economic variables, this paper examines the feedback between trade and growth, testing whether trade encourages growth, particularly via technological innovation. The conclusions can be read as advice for policy-makers, including predictions about future leading countries on the technology frontier, based on the degree of openness to trade.

Asian Air Pollution: Class and Conflict*Rachel Stern '01, International Relations*
ADVISOR: *Katharine H. S. Moon, Political Science*

“Air pollution,” says Indonesian environmental activist Ahmad Safrudin, “is a poor man’s issue.” Air pollution disproportionately affects the poor through increased exposure to pollution and greater inability to pay the resulting health care costs. Looking at two case studies, Hong Kong, China, and Riau, Indonesia, this study examines the nexus between class and the environment in an Asian context. To what degree is air pollution a class issue? How does social class affect the way air pollution is perceived and addressed by society and government? And as air quality worsens in Asia, already home to five of the world’s seven most polluted cities, what are the implications for class relations? (Research supported by a grant from the Dean’s Office.)



Missing Women

Wallis Wilkinson '01, *Economics*

ADVISOR: David L. Lindauer, *Economics*

A common misconception is that women outnumber men in the world. While this holds true for industrialized nations, there are over 40 million more men than women worldwide. Many countries, including India, China and Indonesia, have a substantial "deficit" of women. While there are 105 women for every 100 men in the United States, there are only 94 women for every 100 men in India. Using the concept of a "female to male ratio" (FMR), Amartya Sen calculated that approximately 100 million women are "missing." This sparked substantial publicity, but over ten years later, the question still remains about what factors cause women to die at a higher than expected rate. A reexamination of Sen's calculation reveals that while there are definitely "missing women" in some countries, Sen's methodology is not the best measure with which to gauge whether a country has a "missing women" problem. Analysis of demographic trends provides insight on how women "disappear."

Gender and Sexuality

Societal Structures and Their Effects on Gender Roles (paper session)

Pornography and Fantasy Construction in Modern Russia

Rebecca Gordan '01, *Russian Area Studies*
ADVISOR: Thomas Cushman, *Sociology*

The pornography of an era reflects the era's sexual ideal or fantasy. As the political atmosphere of the period becomes more restrictive or permissive, the fantasy of the era moves in the same direction. In Russia over the last century a pattern of rapid alternations between fantasies of repressed and unconstrained sexuality parallels the country's movement from political anarchy, to communism, to glasnost and the postcommunist era. This pattern and the divide between sexual fantasy and practice are explained in relation to Freud's theories of sexual repression and the creation of society.

Feminist Philosophy of the Military: The Function of Gender in the U.S. Army

Michaele Jo Mandulak '01, *Philosophy*

ADVISOR: Ann Congleton, *Philosophy*

Over the course of American military history, the U.S. Army has had a gendered ideology which contrasts masculinity in soldiers with femininity in those the soldiers "defend." Gender has been manipulated by the government and military to rally support for military actions, as is the case of the Spanish American War. History has also brought changes in gender structure, however, as when the line between the "front" and the "homefront" blurred during the American Civil War. In this century, there have come to be more Army career opportunities for women than ever before. However, these changes have raised an issue of whether there is a limit to how much alteration of gender ideology the military can absorb without losing its ability to function.

Four Weddings and a Funeral: Marriage and Death in Antiquity

Antonia Young '01, *Classical Civilization*

ADVISOR: Mary R. Lefkowitz, *Classical Studies*

The goddess Persephone's screams are heard as Hades, God of the Underworld, carries her off to be his bride. Whereas Sophocles' Antigone laments her tomb which will also serve as her bridal bed. The juxtaposition of marriage and death is ubiquitous throughout much of ancient literature. Marriage in literature is suffused with tension, resistance to leaving maidenhood and the desire to be wife and mother. For fifth century Attic drama, instead of symbolizing new beginning, marriage connotes death. I will show the literary trope not only offers evidence for aspects of ancient marriage customs and funerary rites, which often overlap, but also comments on societal expectations of young women. Epigraphic sources and art works from antiquity confirm the significance of these rites and expectations. The linen noose Antigone hangs herself with simultaneously alludes to a bridal veil and the shroud for a corpse, linking two polarities in life and causing us to examine their meaning for ancient women.

Multiculturalism and Diversity

Analysis of Group Voting Decisions (panel)

Election 2000: Did Anti-Semitism Play a Role in Responses to Lieberman's Nomination?

Ilana Avital '02, *History and Religion*,
Helena Hwang '01, *Political Science and Peace and Justice Studies*,
Katherine Klabau '01, *History*,
Heather Miller '01, *Africana Studies and Peace and Justice Studies*,
Danielle Solomon '02, *History*,
Brynne Speizer '02, *American Studies*,
Meagan Sway '03, *Carissa Wyant '02*,
Peace and Justice Studies and Melissa de la Rama '01, *Biology*

ADVISOR: Frances G. Malino, *History*

On August 7, 2000, Vice President Al Gore selected Senator Joseph Lieberman of Connecticut, an Orthodox Jew, to be his Democratic running mate. The nomination was followed by an outpouring of media coverage and elicited responses from many different communities. The purpose of this panel will be to present the ways in which notable voices from these communities spoke about Lieberman's nomination. Responses from Arab Americans, Asian Americans, Catholics, African Americans, American Jews as well as the Arab media will be examined. We shall also analyze whether anti-Semitism played a part in any of these responses and if so, how this might have affected the voting decisions of Americans identifying with these communities.

A Summer Far Away (panel)

Internships in Asia: Intercultural Experiences in Life

Belinda Dela Cruz '01, *Political Science*,
Deth Sao '01, *International Relations*,
Paige Krause '01, *Religion and Russian Area Studies*,
Claire Levy '02, *International Relations and Mathematics*,
Winnie Tam '02, *Philosophy*,
Lin Yee Chan '01, *Psychology and Kristen Looney '01*, *Chinese Studies*

ADVISOR: William Joseph, *Political Science*

Student participants from the Summer 2000 Luce-Moore Internships in Asia

Program will present their experiences to the college community in a panel discussion supplemented with visual materials. These students were awarded ten-week summer internships in China, Hong Kong, Japan and South Korea. While some students had extensive knowledge of Asia, several of the students had never traveled to Asia before, never experienced its cultures and had little to no knowledge of the host country language. Regardless of prior familiarity with Asia, all of the students learned much from their intercultural experiences and look forward to sharing them with the community. The students will talk about the challenges and rewards of living and working in an Asian country and will discuss how these experiences affected them on personal and professional levels.

Political Development

Stories of Battles, Soldiers and Heroes (paper session)

The Plight of the Defeated: Victory as Tragedy in Aeschylus' *The Persians*

Kimberlee A. Williamson '01, *Classics*
ADVISOR: Mary R. Lefkowitz, *Classical Studies*

The Fall of Miletus and *The Phoenissae* by Phrynichus and *The Persians* by Aeschylus were the only three plays in Greek literature which addressed contemporary historical events, and all three describe defeat in war. Why did these Greek playwrights choose to place such an emphasis on the plight of the defeated? The guilt-inducing *Fall of Miletus* (now lost) so outraged the Athenians that they fined the playwright. Only a few lines of *The Phoenissae* survive, but Aeschylus is said to have based his still-extant play on it. *The Persians* celebrates an incredible Greek victory, yet, told from the point of view of the defeated Persians, this play about triumph assumes the trappings of tragedy. By comparing these plays to Euripides' *Trojan Women* and *Hecuba*, I suggest that these plays which praised the victors also served to warn them that the winners, celebrated now, will someday be the losers, pitied later.

The Deification of the Leaders of World War II

Elizabeth A. Hedstrom '01, *Political Science*
ADVISOR: Andrew Shennan, *History*

Sir Isaiah Berlin said of Winston Churchill that he was "...larger than life, composed of bigger and simpler elements than ordinary men...[a] mythical [being] who [belonged] as much to legend as to reality..." In truth, this could apply to many of the leaders of World War II. Churchill, Roosevelt, Hitler, Stalin, de Gaulle – few figures in history, especially recently, have achieved such lasting global recognition. These men of power, actors in an international drama, left behind records of incomparable deeds, whether "good" or "evil," and legends that would live on long after their deaths. What created these men of action? Was it their own qualities or the times in which they lived that made them "great"? These are questions that have puzzled historians for decades. Through analysis of the leaders of World War II, their early writings and rises to power, we will ponder the question: What makes a "great" man?

Science and Technology

Modern Mathematical Theory and Models (panel)

Death to the Parallel Postulate: Why High School Geometry Just Isn't Good Enough

Pip Huang '02, *Mathematics and Psychology*
Sheree M. Schrager '02, *Mathematics and Psychology*
ADVISOR: Megan Kerr, *Mathematics and Mathematics*

Ever since Euclid set down the first five postulates of formal geometry, high school students everywhere have been told to accept them as truth, the geometry of the world. Do the postulates, in fact, give an adequate representation of the physical universe? We contend that they do not. In fact, Euclid himself doubted the truth of the fifth axiom (which states that there exists exactly one parallel line through a point not on a given line), ironically making himself the first non-Euclidean geometer. Euclid's suspicions were correct, as the existence of

hyperbolic and elliptical geometries shows. We will take a closer look at these two non-Euclidean geometries and their relevance to modern understanding of the nature of the physical universe. As we look at these two "non-Euclidean" geometries, we will present different models in which these two geometries exist.

Road Rules: Traffic Jams – Bad Luck or Fact of Life?

Maggie Waung '02, *Physics and Computer Science*
ADVISOR: Yue Hu, *Physics*

Every driver can describe the horrors of sitting in a traffic jam, including the noisy honking of neighboring cars, the fear of being late and the escalating road rage that even the most amusing of radio DJs cannot placate. What can be done about these irritating events?

The first question to examine, and the focus of this presentation, is the underlying cause of traffic jams. Through the use of a computer simulation, the flow of a one-lane highway can be easily studied by applying a few simple conditions. Parameters of this system include a set speed limit, road length and car length. Variables include the probability of cars slowing down and driver reaction time. Initially, cars are spaced along the road. Each car is randomly assigned a speed (under the speed limit – no speed demons allowed!). Based upon the space they have in front of them, cars either progress at their assigned speed or at the maximum speed possible without hitting the car in front of them.

The simulation shows that, contrary to popular belief, traffic jams are not solely caused by accidents or stalled cars. They are inherent in a road with a critical number of cars.

Spin Up, Spin Down: Phase Transition Modeling through Computer Simulation

Erika O. Symmonds '02, *Computer Science and Physics*
ADVISOR: Yue Hu, *Physics and Laurie Wardell, Physics*

Two familiar phase transitions, vapor to water and water to ice, occur at very



specific temperatures. When a bar magnet (a ferromagnetic material) is heated, it will undergo a phase transition at a particular temperature and will lose its magnetism. The goal of this study is to simulate the phase transition in a ferromagnet using a Monte Carlo method. Our model is a square lattice in which a mini-magnet exists at each lattice site. These mini-magnets interact only with their immediate neighbors, and their natural desire is to point in the same direction. At low temperatures, the mini-magnets tend to be aligned, producing a ferromagnet. As temperature reaches a critical point, these mini-magnets abruptly lose their alignment, leaving the material non-magnetic (a phase transition has occurred). This simulation helps us to understand why phase transitions occur.

Wild and Mutant Strains (panel)

Quantitative Measurement of Cyanophycin Using Proton NMR Spectroscopy

Marisol Arguelles '04 and Estelle Lin '03, Biological Chemistry
 ADVISOR: Nancy H. Kolodny, Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences

Previous work in our laboratory suggested that there was a correlation between the concentration of cyanophycin and the integrated ratios of specific peaks in its proton (^1H) NMR spectrum. The purpose of our investigation was to verify this correlation, demonstrate its reproducibility and apply this methodology to analyze the cyanophycin content of cyanobacteria. ^1H NMR spectra of serial dilutions of cyanophycin in 0.1 N HCl verified the proposed correlation and demonstrated its reproducibility. The cyanophycin content of wild-type and mutant forms of the cyanobacteria *Synechocystis* sp. Strain PCC 6803 provided by Dr. L. Sherman of Purdue University was determined using this correlation. Only the wild-type 6803 cells grown with chloramphenicol, an inhibitor of protein synthesis on ribosomes, showed a significant presence of cyanophycin. (Research supported by NSF RUI, NSF AIRE and HHMI grants.)

^1H NMR Spectroscopic Studies of the Synthesis of Cyanophycin by Nitrogen-Starved Cyanobacteria after Incubation with $^{15}\text{NH}_4\text{Cl}$

Salima Shaikh '01, Biological Chemistry
 ADVISOR: Nancy H. Kolodny, Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences

To study the metabolism of the cyanobacterial nitrogen storage molecule cyanophycin granule polypeptide (CGP), nitrogen starvation was induced in the species *Synechocystis* sp. Strain PCC 6308. During the starvation period, CGP degradation was expected. $^{15}\text{NH}_4\text{Cl}$ (2 mM) and TES buffer (4 mM) were then added to the growth medium. The cells were sampled at fixed time intervals after nitrogen re-addition and subjected to a variety of tests. Initial results show that dry weights of the cells stayed relatively constant over the 24-hour time period after nitrogen re-addition. CGP was extracted from the cells with 0.1 N HCl after each time interval and subjected to ^1H NMR spectroscopy. A high $^{15}\text{N}:\text{N}$ ratio was seen in the spectra of cells from the later time periods. This suggests that ammonium-derived nitrogen from the medium, not from degraded cellular proteins, was preferentially incorporated into CGP at these times. (Research supported by NSF RUI, NSF AIRE and HHMI grants.)

Cyanophycin Formation after Chloramphenicol Treatment

Maliha Farooq '02, Sociology
 ADVISOR: Nancy H. Kolodny, Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences

Cyanophycin is a nitrogen reserve material that accumulates during environmentally stressful conditions in cyanobacteria. The synthesis and degradation of cyanophycin are under study in our laboratory using experiments in which cells are grown under different culture conditions and cyanophycin is analyzed by ^1H NMR spectroscopy and gel electrophoresis. Cells were treated with chloramphenicol alone or with low light and chloramphenicol, and cyanophycin was isolated at different times after treatment. NMR spectroscopy showed an immediate increase in the

amount of cyanophycin; the nitrogen in cyanophycin originated both from the medium and cellular protein breakdown. Cells repleted with ^{15}N -nitrate in the presence of chloramphenicol in high light showed cyanophycin with 50% ^{15}N in 2.5 hours, while cells with ^{15}N -nitrate and chloramphenicol in low light showed 50% ^{15}N by 15 hours. SDS-PAGE and immunoblotting with antibody raised to purified cyanophycin showed an increase in cyanophycin molecular weight after cells were treated with chloramphenicol and low light. These experiments suggest that not only do the granules increase in size, but also the molecular weight of the polymer increases with time after chloramphenicol treatment. (Research supported by NSF RUI, NSF AIRE, HHMI and a Brachman Hoffman award.)

Proteolytic Enzymes Induced in Cyanobacteria in Response to Stress

Dana J. Huebert '03, Kristen M. Blanton '04 and Michelle Iniguez '03
 ADVISOR: Nancy H. Kolodny, Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences

We have been studying proteases induced in cyanobacteria in response to nitrogen starvation and other stresses. Specifically, we have been examining the relationship between proteases produced following nitrogen starvation and refeeding, and proteins involved in the synthesis and degradation of the nitrogen-storage molecule cyanophycin. The cyanobacteria studied included strain 6803 and two mutants, each of which is missing a protein: One of these lacks the protease to break down cyanophycin, while the other lacks the synthetase to make cyanophycin. Each of the three strains was starved for nitrogen for several days and re-fed with nitrate. The cells were allowed to grow for varying amounts of time and then harvested. In another series of experiments, proteases were induced by stress with high salt. The proteins induced by this process in each strain were then analyzed with casein zymogram gels and NMR techniques. (Research supported by NSF RUI, NSF AIRE and HHMI grants.)



Acid Tolerance in the Cyanobacterium *Synechocystis* sp. Strain PCC 6308

Jean Huang '01, *Biological Sciences and Margarita Torres '01, Biological Sciences*
 Advisor: Nancy H. Kolodny, *Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences*

The goal of these experiments is to study how the cyanobacterium *Synechocystis* sp. Strain PCC 6308, which grows optimally at ~pH 8, responds to acidic pH stress. Acid tolerance of this organism has been shown to involve changes in protein expression, pigmentation, internal as well as external pH and the formation of as yet unidentified intracellular granules. The lower pH limit for growth of this bacterium is ~pH 4.4, and growth experiments as well as fluorescence microscopy using Sytox Green™ dye (Molecular Probes) were used to investigate cell viability. (Research supported by NSF RUI, NSF AIRE, HHMI grants and the Beckman Foundation.)

Determining an Alternate Source of Nitrogen in Growth Media for *Synechocystis* sp. PCC 6308 and Influences of pH on the Media

Joy Tanaka '02, *Biological Sciences and Katherine Shea '03, Biological Sciences*
 Advisor: Nancy H. Kolodny, *Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences*

Our research focused on finding the optimal growth medium for the cyanobacterium *Synechocystis* sp. strain PCC 6308. In our laboratory, cyanobacteria have typically been fed nitrate as its nitrogen source; however, we wanted to determine if this strain would grow better if ammonium chloride was provided instead. We hypothesized that the cyanobacteria would grow better with this nitrogen source, because it is known that ammonium enters most cells and is directly utilized, whereas when cells are fed nitrate, it must be converted into nitrite, and then ammonium, before it is utilized. The amount of growth and pH of the medium were monitored; growth curves and growth yields were plotted. The buffer TES was used because ammonium chloride is acidic; experiments were also carried out to determine the buffering

capacity of TES. Results indicate that TES is not a good buffer under our conditions and that the optimal ammonium concentration is 4 mM. (Research supported by NSF AIRE, NSF RUI and HHMI grants.)

Purification of an Enzyme from Cyanobacteria Involved in Nitrogen Metabolism

Jane A. Gwira '01, *French Cultural Studies*
 Advisor: Nancy H. Kolodny, *Chemistry, Adele J. Wolfson, Chemistry and Mary M. Allen, Biological Sciences*

These experiments deal with the purification of a protease (an enzyme that degrades proteins) with a molecular weight of 62 kD, from cells of the unicellular cyanobacterium *Synechocystis* sp. Strain PCC 6308. Cyanobacteria are prokaryotic organisms belonging to the eubacteria group, which carry out photosynthesis. Our laboratories have shown that a number of physiological and biochemical changes occur in cyanobacteria that have been nitrogen starved and re-fed with a form of nitrogen such as nitrate. Cells were grown under nitrogen-limiting conditions, then re-fed with nitrogen for one hour. Previous experiments have shown that a 62kD protease is induced in cells under these conditions. Purification methods include the use of ammonium sulfate precipitation, DEAE-Sepharose column purification and gel electrophoresis. Purification steps are followed using casein zymogram gels. (Research supported by NSF RUI, HHMI grants.)

The Arts

The Real World Meets the Internet (paper session)

"Of Course It's True; I Saw It on the Internet!"

Leah Graham '02, *International Relations*
 Advisor: P. Takis Metaxas, *Computer Science*

Today, students are bombarded with an astonishing amount of information from all sides. E-mail and the Internet have made it virtually painless for anyone to share or gather information. Unfortunately, not all Web sites are created equal, and not all

information is trustworthy. Without a formal certification process, the Internet is overrun with half-truths, propaganda and out-right lies. Though there are certainly reliable and authentic Web sites, it is very difficult to distinguish the good from the bad. As students now rely more on the Internet for research and information, without careful training they are becoming more susceptible to these traps. To better grasp the scope of this situation we will examine how students respond to various forms of "information" on the Internet, such as political propaganda, medical scams and advertising ploys. How do students determine the reliability and accuracy of information provided by Web sites? Do students readily believe Microsoft? The United States government? How often do students double-check information cited in a Web site? Two hundred students of varying backgrounds and abilities were surveyed to help develop a better understanding of students' abilities to critically evaluate information found on the Internet. (Research supported by a Mellon Technology Grant.)

Creating a Web Site for Special Education and Information Technology

Silvia Alina Tomai '02, *French and Elementary Certification*
 Advisor: Barbara Beatty, *Education*

My work with children who have been diagnosed with autism led me to the realization that that Web-based information technology could be useful for teachers who work with children who have special needs. My presentation will introduce a new, interactive Web site designed for Wellesley College's education department. Based on the nine major categories of special education as defined by federal law, the Web site includes an overall explanation of children's disabilities and their various characteristics. In addition, page links allow for navigation of the regulations from all 50 states. Another page of the Web site provides a detailed explanation of individualized education plans along with relevant terms and definitions. The essential information which has been compacted into this Web site should be an important new resource for teachers and students who are interested in special education.

TextRadio

Rachel Lomasky '01, *Computer Science*
 ADVISOR: P. Takis Metaxas, *Computer Science*

TextRadio is a new, experimental communications method. Using PHP, Swift and Flash, it grabs random FirstClass conference posts, and breaks them into small pieces to be animated. The DJ is you, the person who posts on TextRadio conference. Just feed it whatever you'd like, whether it's a poem, an announcement, your English paper or the news. And then watch a Shockwave Flash movie animate your text. Come see TextRadio in action, along with a nonprogrammers' explanation on how it works.

Prism Jazz (performance)

Exploration through Jazz Performance

Meg Niman '01, *Cognitive Science*,
 Nalyn Siripong '02, *Chemistry and Economics*, Mandy Wong '01, *Music*,
 Dena Citron '01, *Psychology and Sociology*, Beverly Luther '03, *Jessica Lee '04*, *Jennifer Gordon '04*, *Caitlin Blaser '04 and Morgan Russell '01*,
Music and Economics

ADVISOR: Paul Barringer, *Music*

Prism Jazz is an eight-member instrumental ensemble that plays a wide range of jazz and improvisational music from African American and Latin jazz traditions. Ranging from blues to swing, traditional American jazz rhythms to Afro-Cuban

beats, Prism Jazz attempts to explore the gamut of jazz music. The theory of the music is discussed to understand the chord progression that correlates with the sounds created in the group. Backgrounds of composers are also discussed to better understand the roots of the style and rhythms used in the music. At the same time, emotional and personal expression is emphasized through individual solo improvisation. Furthermore, group improvisation explores the musical connection underlying the improvisation process as a whole. Performances will include works performed by smaller groups and in collaboration with other Wellesley College students, as well as the ensemble as a whole.

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Addendum to Ruhlman Conference Program

Late Breaking Poster Session

3:00 - 4:10

Science Center Focus

Predicting the Fate of an Endangered Plant

Susan Glover '01, Biology and Anthropology

Advisor: Kristina Jones, Biological Sciences

Republic to Renaissance: The Laocoon Group and Its Influence

Sarah Elizabeth Beam '02, Classical Civilizations

Advisor: Raymond Starr, Classical Studies

Library/Archives

Predicting the Fate of an Endangered Plant

Susan Glover '01, Biology and Anthropology

Advisor: Kristina Jones, Biological Sciences

Trollius laxus (Spreading Globeflower) is a rare plant, native to wetlands of New England, whose populations fluctuate erratically. In an effort to understand factors determining population dynamics in this plant, we have initiated a long-term comparative study of *T. laxus* and *T. albiflorus*, a closely related and much more common species. Last summer we set up monitoring plots in natural populations of *T. laxus* in Connecticut and *T. albiflorus* in Colorado, where we collected demographic data such as size and location of plants, seedling distribution, and whether fruits had been eaten by deer. In order to determine how sensitive *Trollius* population size and structure are to certain variables, Kristina Jones, together with the Fall 2000 Physics 124 class, designed a simulation model of *Trollius* population dynamics. I am applying this model to our initial data to explore the effects of two variables on *Trollius* populations: the frequency of deer consumption of fruits, and rates and variation in seedling survival. The results of my study will be used to inform decisions for the management of the endangered species.

Republic to Renaissance: The Laocoon Group and Its Influence

Sarah Elizabeth Beam '02, Classical Civilizations

Advisor: Raymond Starr, Classical Studies

In January of 1506, a Roman wine maker stumbled upon the buried ruins of Nero's Domus Aurea while tending his vineyards of the Esquiline Hill. Inside was the famous Laocoon sculpture group, which Pliny refers to in his Natural History as "a work superior to any painting or bronze." Renaissance poet Jacobus Sadoletus claimed it "was wrought by skill divine" and "even learned ancients saw no nobler work." The marble sculpture of a priest and his two sons being devoured by serpents has been an object of both praise and censure for the past two thousand years. The story depicted is one of the Trojan priest Laocoon being silenced as he was about to warn the Trojans that the Greeks were inside the Trojan horse. Book Two of Virgil's Aeneid, Michelangelo's Sistine Chapel ceiling, and El Greco's Laocoon all take inspiration from this Hellenistic image. The appreciation of the group suffered a backlash in the middle of the nineteenth century when it was even labeled a failure. Since its rediscovery, the Laocoon group has survived five hundred years of reconstructions, critiques, and imitations and has triumphed as both a technical and artistic wonder.