

#### HISTORY

Since the College's first commencement in 1821, Allegheny students have showcased their exceptional academic achievements through a senior capstone experience of one kind or another. At times it involved an oral defense, at others a written thesis. The notion of a written Senior Project coupled with a comprehensive oral examination first appeared in the 1942 College Catalogue. In the 1970s, oral examinations shifted from a general defense of disciplinary expertise to a more focused verbal presentation of the Senior Project findings.

#### PREPARATION

The Senior Project provides students with an opportunity to integrate discipline-specific scholarship with the communication and research skills necessary for professionals in the 21st century. During their first year at Allegheny, students write, speak, and research frequently in their first-year seminars. By the sophomore year they are ready to undertake the complexities of writing and speaking in a specific discipline. They further hone these disciplinary communication skills in a junior seminar, the final preparatory phase for the Senior Project. By the senior year students are sufficiently prepared to undertake a scholarly endeavor approximating those experiences they will face as professionals in their field.

#### REALIZATION

The culminating experiences of the Senior Project are as varied as the disciplines that produce them, from recitals, performances, and exhibits to written and oral presentations on laboratory research. Many illustrate unusual combinations of disciplines, interests, and skills. The Senior Project Celebration offers an open forum for students to present their projects, allowing seniors to refine their skills in presenting to a broad audience and share ideas with other students and the campus community.

# ALLEGHENY COLLEGE

The national liberal arts college where 2,100 students with unusual combinations of interests and talents develop highly valued abilities to explore critical issues from multiple perspectives.

# SENIOR PROJECT CELEBRATION

In keeping with Allegheny's commitment to provide students with a liberal arts education of high standards, the Senior Project is not a mere report or semester paper, but a significant piece of independent study, research, or creative work conducted under the supervision of one or more faculty members. **The outcome of a Senior Project is more than a grade or a written document;** for the student it often results in a new way of looking at complex problems and inspires an appreciation for the power of ideas that might previously have seemed like abstract concepts in a textbook. Often it can be a pivotal moment when a student realizes his or her own abilities and potential.



## ALLEGHENY COLLEGE

APRIL 30, 2010

# ORAL PRESENTATIONS

11:00 a.m.

## ANDREA CHARBONNEL

### An Investigation of the Helical Flattening of Cholesteric Liquid Crystals with Applications in Random Lasing with Quantum Dots

Major: Physics / Minor: History

Senior Project Advisor: David Statman

CC 303

## SIMON KOHNSTAMM

### Surface Plasmon Resonance Characterization of the Hydrophobic Depletion Layer

Major: Physics / Minor: English

Senior Project Advisor: Adele Poynor

CC 206

## RAY SRP

### Presidential Personality and the Nomination Process for Supreme Court Justices

Major: Political Science / Minor: Mathematics

Senior Project Advisors: Robert Seddig, Dan Shea

CC 301

## STEVE SUCHORA

### Application of SP and RP Methods of Modeling Consumer Choice for Market Research on the SAT Operating System™ as a Commercial Product

Major: Economics / Minors: Biology, Psychology

Senior Project Advisors: John Golden, Chris Allison

CC 302

11:20 a.m.

## JAMES KUKUNAS

### A Genetic Algorithm To Improve Kernel Performance on Resource-Constrained Devices

Major: Computer Science / Minor: Classical Studies

Senior Project Advisors: Gregory Kapfhammer, Robert Cupper

CC 301

## ZACK REARICK

### Online Performance and the Congressional Use of Social Media Technologies

Majors: Communication Arts, Political Science

Senior Project Advisors: Ishita Sinha Roy, Dan Shea

CC 303

## KYLEE TOFANI

### Inhibitory Effects of Vaginal Lactobacillus on *Haemophilus ducreyi* Growth

Major: Biology / Minor: Religious Studies

Senior Project Advisor: Tricia Humphreys

CC 206

## DAN WINSTON

### The Effects of Written Grammar on Face-to-face Communication and Impressions

Major: Psychology / Minor: Theatre

Senior Project Advisor: Aimee Knupsky

CC 302

11:40 a.m.

## LAUREN BIRSIC

### A Social Worker's Struggle Against Patriarchy: Causes and Solutions of the Gendered Violence During the Partition of British India in 1947

Major: History / Minor: English

Senior Project Advisor: Kale Haywood

CC 302

## JAMES DEVINE

### An Empirical Evaluation of Methods for Improving Efficiency in Xen Virtual Machine CPU Scheduling

Major: Computer Science / Minor: Economics

Senior Project Advisors: Robert Cupper, Gregory Kapfhammer

CC 301

## JENNA GATHMANN

### Expanding the Cohousing Market To Include Low-income Residents

Major: Environmental Studies / Minor: Writing

Senior Project Advisor: Michael Maniates

CC 206

## SARAH ODIOSO

### Music Mathematically

Major: Mathematics / Minor: Music

Senior Project Advisors: Harold Ellers, Matthew Clay

CC 303

Noon

## EMILY BENZ

### Vietnam: From Colony to Communist

Majors: International Studies, French / Minor: Asian Studies

Senior Project Advisors: Howard Tamashiro, Phillip Wolfe, Guo Wu

CC 303

## RACHEL LEVINE

### God After the Holocaust—In Defense of Free Will

Major: Religious Studies / Minor: Political Science

Senior Project Advisor: Glenn Holland

CC 302

## MATT NECKELMANN

### Opening and Reform in China as Explained by Theories of International Relations

Major: International Studies / Minor: German

Senior Project Advisors: Sharon Wesoky, Rui Wu, Jochen Richter

CC 206

## ALEX URBAN

### Simulation and Analysis of Order-Disorder Transitions in the Q-state Antiferromagnetic Potts Model Using the Multiple Histogram Method

Major: Physics / Minor: Political Science

Senior Project Advisor: Shafiqur Rahman

CC 301

12:20 p.m.

## LAUREN BAKER

### Civility Amongst Non-Citizens: Challenges and Prospects for Civil Society in the United Arab Emirates

Major: International Studies / Minors: French, Spanish

Senior Project Advisors: Laura Reeck, Shanna Kirschner, Antoni Moskwa

CC 303

## MAYA BROD

### Israeli Democracy and the Arab Minority: Can They Coexist?

Major: Political Science / Minor: Communication Arts

Senior Project Advisor: Howard Tamashiro

CC 206

## NICHOLAS DISPENZA

### An Analysis of the Linear Sum of Two Composition Operators on the Fock Space

Majors: Mathematics, Spanish

Senior Project Advisors: Brent Carswell, Michael Barry

CC 302

## BRANDON GOELLER

### Examining the Regional Utility of a Fish Index of Biotic Integrity (IBI) in the Oil Creek and French Creek Watersheds of Northwestern Pennsylvania

Majors: Biology, Environmental Science / Minor: German

Senior Project Advisors: Scott Wissinger, Milton Ostrofsky

CC 301

# POSTER PRESENTATIONS

11:30 a.m.

ALL POSTER PRESENTATIONS ARE IN THE CAMPUS CENTER LOBBY EXCEPT WHERE NOTED

## ERICA BELDEN

### Decadence et Surrealisme dans Les Chatns de Maldoror

Major: French / Minors: Political Science, Psychology

Senior Project Advisor: Courtenay Dodge

## BRITTANY BELL

### The Effects of the Use of Figurative Language in Advertisements on Purchase Intent

Major: Psychology / Minors: Communication Arts, Spanish

Senior Project Advisors: Aimee Knupsky, Patricia Rutledge

## EMILY BENZ

### Vietnam: From Colony to Communist

Majors: International Studies, French / Minor: Asian Studies

Senior Project Advisors: Howard Tamashiro, Phillip Wolfe, Guo Wu

## KRISTIN BLANKEMEYER

### The Effects of Environmental Enrichment on the Inflexible Behaviors of Autism

Major: Neuroscience / Minor: Economics

Senior Project Advisor: Rodney Clark

## ANDREA CHARBONNEL

### An Investigation of the Helical Flattening of Cholesteric Liquid Crystals with Applications in Random Lasing with Quantum Dots

Major: Physics / Minor: History

Senior Project Advisor: David Statman

## MELISSA DANIELSON

### Abstract Impressionist Landscape Paintings (ART GALLERY)

Major: Studio Art / Minor: Psychology

Senior Project Advisors: Sue Buck, Amara Geffen

## CHRISTOPHER ELNICKI

### The Power of the Black Press: The Significance of the *Pittsburgh Courier*, 1935–1945

Major: History / Minor: English

Senior Project Advisor: Franklin Forts

## BENJAMIN R. EYER

### Total Synthesis of a Potential Antifouling Sesquiterpene Furan Natural Product

Majors: Chemistry, Spanish

Senior Project Advisor: Shaun Murphree

## EMILY FOGOROS

### Concordance Between Invertebrate and Fish Indices of Biotic Integrity in the French Creek Watershed

Major: Environmental Science / Minor: English

Senior Project Advisor: Scott Wissinger

## JESSICA K. KENEMUTH

### Investigation of the Role of the cGMP-sensitive Cyclic Nucleotide-gated Channel and Guanylyl Cyclase-D in the CO2 Transduction Pathway in Mice

Major: Neuroscience / Minor: History

Senior Project Advisor: Lee Coates

## GREGORY MERZ

### A Structural and Thermodynamic Characterization of Single Adenine Group I and Group II Bulge Loops

Majors: Chemistry, Economics

Senior Project Advisor: Marty Serna

## STEPHANIE MILLER

### The Psychology and Spirituality of Mindfulness-Based Stress Reduction

Majors: Psychology, Religious Studies

Senior Project Advisors: Elizabeth Ozorak, Rev. Jane Ellen Nickell

## AMANDA OLAR

### The Effects of Long-Chain Omega-3 Fatty Acids on the Mood of Cancer Patients

Major: Neuroscience / Minor: Values, Ethics and Social Action

Senior Project Advisor: Sarah Conklin

## EUGENE RAGGI

### A Thermodynamic Investigation of the DEAD-box RNA helicase Rok1p

Major: Biochemistry / Minor: Philosophy

Senior Project Advisor: Ivelitza Garcia

## SARAH RALEY

### Effect of Yoga on the Sustained Attention of Preschool Children

Major: Psychology / Minor: Communication Arts

Senior Project Advisors: Deb Dickey, Aimee Knupsky

## SAMUEL RIGOTTI

### Environmental Problem-Solving: How Do We Make Change? A Survey of Undergraduate Attitudes and Perceptions

Major: Environmental Studies / Minor: Religious Studies

Senior Project Advisor: Michael Maniates

## THERESA SCHWARTZ

### The Renova Formation as a Record of Paleolandscape, Paleodrainage and Post-Laramide Basin Development Atop the Cordilleran Orogenic Wedge, Southwestern Montana

Major: Geology / Minor: Economics

Senior Project Advisor: Robert Schwartz

## SARAH SCKENA

### An Investigation of the Vitamin-C Biosynthetic Pathway: The Effects of Jasmonic Acid on vtc1 Mutants in *Arabidopsis thaliana*

Major: Biochemistry / Minor: Classical Studies

Senior Project Advisor: Ann Kleinschmidt

## RICHARD SHAFRANEK

### Framing Consumption: College Students and the Connotations of Consumerism

Majors: English, Political Science

Senior Project Advisors: Michael Maniates, Jennifer Hellwarth

## JESSICA SINNOTT

### Operational Effectiveness in Public High Schools

Major: Economics / Minor: Studio Art

Senior Project Advisor: Stephen Onyeiwu

## NOAH ROBERT SNYDER

### EPR Characterization of Mn(II) Containing Potential Superoxide Dismutase II Mimics

Majors: Biochemistry, Neuroscience / Minors: Physics, Chinese Studies

Senior Project Advisors: Doros Petasis, Rodney Clark

## TRISTA SZOCS

### The Landscape of Disaster: Katherine Anne Porter's Critique of the Traditional South in Her Miranda Series

Major: English / Minor: Psychology

Senior Project Advisor: David Miller

## KYLEE TOFANI

### Inhibitory Effects of Vaginal Lactobacillus on *Haemophilus ducreyi* Growth

Major: Biology / Minor: Religious Studies

Senior Project Advisor: Tricia Humphreys

## THEODORE ZIELINSKI

### The Evolution of China's Political and Economic Relationship with Africa: History, Motivation and Criticism

Major: International Studies / Minor: Chinese

Senior Project Advisor: Sharon Wesoky

## SHANNON ZARET

### The Effects of Garlic Mustard (*Alliaria petiolata*) Leachate on Native Pennsylvanian Grassland Species

Major: Environmental Science / Minor: Spanish

Senior Project Advisor: Richard Bowden