

UNION  
COLLEGE



807 Union Street  
Schenectady, NY 12308  
518.388.6000  
www.union.edu

The Charles Proteus Steinmetz Symposium

MAY 13/14  
2011

The Charles Proteus  
Steinmetz Symposium  
Student Creative, Scholarly and Research Achievement

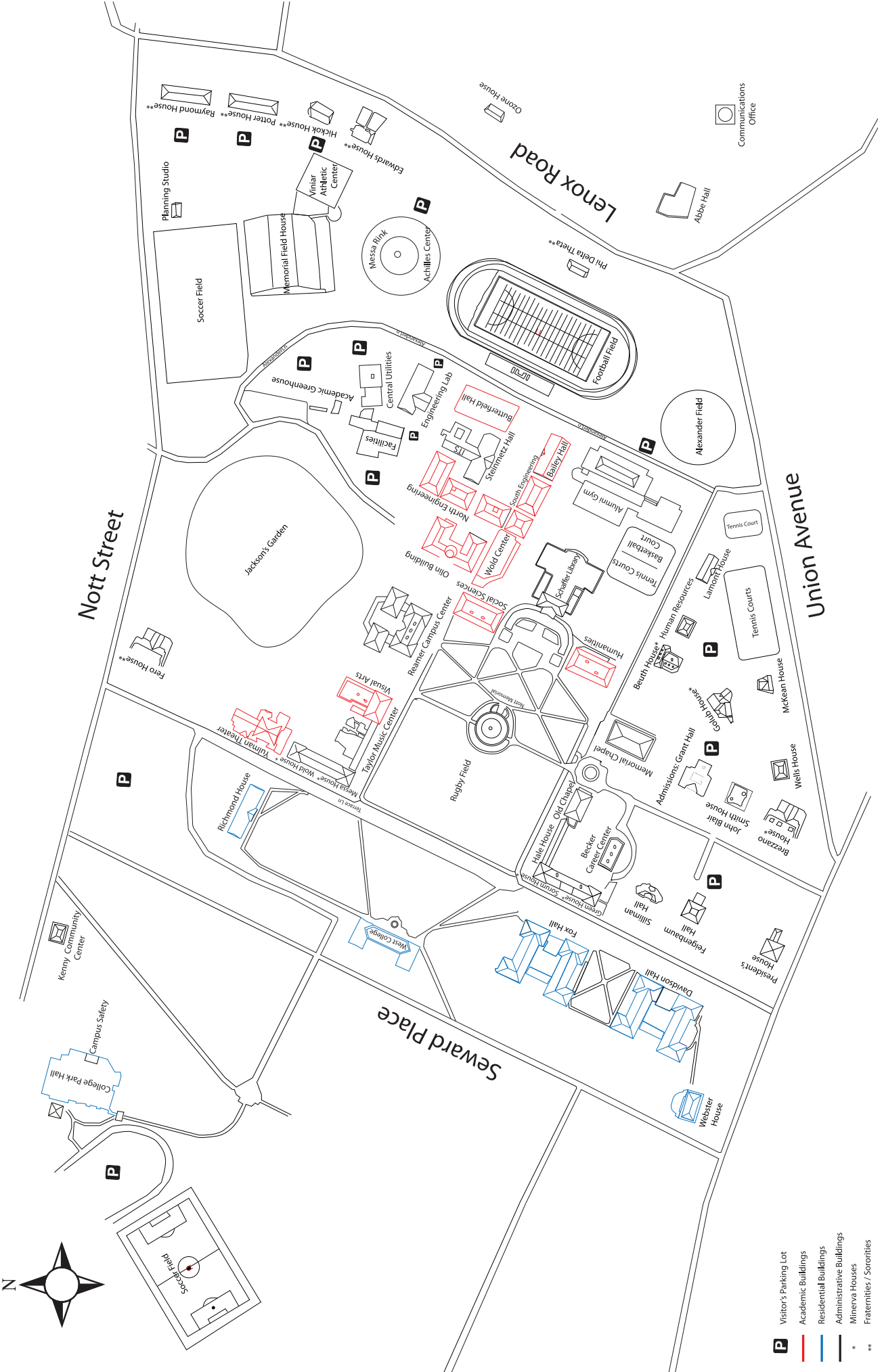
# DEDICATION

Electrical engineer, inventor, and educator, Charles Proteus Steinmetz was born Carl August Steinmetz in Breslau, Germany (now Wroclaw, Poland) in 1865. In 1883 Steinmetz enrolled at the University of Breslau to study mathematics. True to his philosophy of education, he pursued an unusually broad course of studies, including astronomy, biology, chemistry, electricity, physics, and political economy. Steinmetz was also attracted to socialism, leaning toward the tenets of that doctrine that emphasized peaceful change and the foundation of cooperative communities. "Cooperation" became the central theme of a lifelong intellectual quest for the ideal political system.

Steinmetz fled Germany in 1888 when he came under police suspicion for editing a socialist newspaper at a time when socialism was illegal. He arrived in New York City in 1889, speaking no English, with \$10 in his pocket and no job. He soon found work in New York City and there made his first major contribution to electrical engineering, developing the law of hysteresis. Eventually employed by the General Electric Company in 1892, and relocating to Schenectady in 1894, Steinmetz remained with General Electric until his death in 1923. Early in his career Steinmetz made two other major contributions to electrical engineering: the application of imaginary number calculations to the solution of electrical engineering problems, and the theory of transient phenomena and oscillations. Awarded honorary degrees by both Harvard University and Union College, Steinmetz was for two generations, after Edison, the most recognized name in the realm of electricity. He became Professor of Electrical Engineering at Union College in 1902, as well as Chairman of the Electrical Engineering Department in 1905. After World War I, Steinmetz ceased lecturing at Union College, though he remained a nominal member of the faculty and a warm and active friend of the College for the remainder of his life. Steinmetz wrote that "Teaching is the most important profession, because upon teachers depends the future of our nation, and, in fact, all civilization."

Union College is proud to dedicate the The Charles Proteus Steinmetz Symposium on Student Creative, Scholarly and Research Achievement to the memory of this scholar, teacher and practitioner.

Kristin M. Fox  
Director of Undergraduate Research



# SCHEDULE OF EVENTS

## RECOGNITION WEEKEND

MAY 13/14, 2011

### FRIDAY, MAY 13

9:00 A.M. - 5:00 P.M.

#### The Charles Proteus Steinmetz Symposium

Presentations on student creative, scholarly and research achievement. Programs and information are available in the Arts Atrium, just inside the north entrance to Humanities and just inside the entrance to the Wold Center Atrium.

**Student presentation sessions begin at 9:00 a.m.**

6:00 P.M.

Steinmetz Symposium Banquet  
Upperclass Dining Hall

**For Symposium presenters, their parents, guests,  
and faculty sponsors**

8:00 P.M.

The Union College Jazz Ensemble & Camerata Singers  
**Memorial Chapel**

### SATURDAY, MAY 14

11:00 A.M. - 12:30 P.M.

Prize Day - Memorial Chapel

12:30 P.M. - 1:30 P.M.

Prize Day Reception - Reamer Campus Center Patio

---

## TABLE OF CONTENTS

Session I (9:00 - 10:20)	p. 3-6	Dance Performance (4:00)	p. 23-24
Session II (10:30 - 11:50)	p. 7-12	Steinmetz Concert (8:00)	p. 26-26
Session III (12:20-1:50)	p. 13-14	Art Exhibits	p. 27-28
Session IV (2:00 - 3:20)	p. 15-18	Poster Presentations	p. 13-14
Session V (3:30 - 5:10)	p. 19-22	Large Project Display	p. 14

---

#### The C-Store will be open:

Friday from 8:45 a.m. – 11:00 p.m.

Saturday from 10:30 a.m. – 11:00 p.m.

Sunday from 4:00 p.m. – 11:00 p.m.

#### The Nott Memorial will be open:

Friday from 10:00 a.m. – 6:00 p.m.

Saturday from 10:00 a.m. – 6:00 p.m.

Sunday from 10:00 a.m. – 6:00 p.m.

#### The Bookstore will be open:

Friday from 8:45 a.m. – 6:30 p.m.

Saturday from 10:30 a.m. – 3:30 p.m.

Sunday closed

#### Schaffer Library will be open:

Friday from 8:00 a.m. – 10:00 p.m.

Saturday from 10:00 a.m. – 10:00 p.m.

Sunday from 10:00 a.m. – 2:00 a.m.

## Bioengineering and Biological Sciences

Bailey 207

Moderator: Jen Bishop

- 9:00 | **ANTHONY CASSESE** | The mechanical properties of the mutable collagenous tissue of the sea urchin catch apparatus
- 9:20 | **NANCY MIORELLI** | Living on the Edge: How Prairie Warbler Fecundity is Affected by Edge Effects
- 9:40 | **MICHAEL VARUGHESE** | Effects of Arginine on Kinetics of Bovine Insulin Aggregation Studied by Dynamic Light Scattering

## Christians, Jews and Muslims: Cultural Exchanges in Early Modern Spain and “Converso” Culture in the Americas I

Hum 008

Moderator: Pilar Moyano

- 9:00 | **ELIZABETH ACKLEY** | Racism in Modern Spain: The Influence of Historic Catholic Rule on Today
- 9:20 | **ZORALYS MOLINA** | Lost between identities: Sephardim and the search for identity to find the way to their roots
- 9:40 | **LYDA URRESTA** | The Art of Mathematics in the Medieval Islamic World of Al-Andalus (Spain)
- 10:00 | **ARIA WALFRAND** | Interfaith Marriage: A Comparison of Medieval and Modern-Day Spain

## Classics I

Hum 112

Moderator: Hans Mueller

- 9:00 | **JOHN ANDERSON** | The Effects of the Battle of Cannae in the Second Punic War
- 9:20 | **DANIELE BEAUMAN** | Pious Odysseus? His Actions and Legacy.
- 9:40 | **DAVID BREAZZANO** | Greek Philosophy and its Effect on Modern Economics
- 10:00 | **MARICA DACEY** | Familial Roles in Ancient Rome as Seen in Valerius Maximus

## Political Science I

Hum 117

Moderator: Zoe Oxley

- 9:00 | **KATHRYN LEARY** | How Soft News Affects Attitudes and Behaviors of 18-24 Year Olds
- 9:20 | **MATTHEW ROGERS** | Eminent Domain in the Aftermath of the Kelo Decision
- 9:40 | **JUSTIN REAL** | The Balance of US Foreign Policy

## Developmental Psychology

Bailey 312

Moderator: Linda Stanhope

- 9:00 | **SHANNON FUNKHOUSER** | Theory of Mind, Temperament, and Prosocial Behavior in Preschoolers
- 9:20 | **ARIELLE GARTENBERG** | Disordered Eating as a Consequence of Thin-Ideal Television: An Investigation of Internalization & Self-Monitoring as Potential Moderating Factors
- 9:40 | **BRITT GOTTLICH** | Self-Monitoring Style and Gender-Stereotyped Vocational Choice
- 10:00 | **MOLLY HEAD** | Relationship Among Parental Divorce, Attachment Quality, and Romantic Partners in Young Adults

## Economics I

Hum 016

Moderator: Eshragh Motahar

- 9:00 | **JORGE ENRIQUEZ** | Middle Class, Political Competition & Economic Growth
- 9:20 | **MATTHEW GOODRICH** | Do Charter Schools Affect The Performance of Traditional Public School Students? Evidence from Michigan
- 9:40 | **MICHAEL SPICER** | Following the Herd: An Economic Analysis of the Effects of Herd Mentality on the U.S. Housing Bubble
- 10:00 | **MAXWELL TROOP** | What Prevented the Great Recession from Evolving into Another Great Depression? A Comparison of the Two Crises

## French I

Hum 014

Moderator: Charles Batson

- 9:00 | **LAUREN BROWN** | The Weight of Words: Linguistic Expression in French Absurdist Theatre
- 9:20 | **ANDREW DAVIS** | Sarah Le Pen or Marine Palin? Analyzing the Differences between Far Right Movements in the United States and France
- 9:40 | **JENNIFER GRANINA** | French Feminism: Fact, Fiction
- 10:00 | **EMMA KROSSCHELL** | Le Moi Double: The (Post)colonial Unconscious of Césaire and Breton

## History and American Studies

Arts 215

Moderator: Robert Wells

- 9:00 | **DYLAN HAWKINS** Sustainable Food: Market Condition of New York Organic Dairy and Recommendations for Policy Reform
- 9:20 | **DANIELLE MCCUNE** The Effectiveness of the Farmers Markets an CSAs in Upstate New York
- 9:40 | **DANIEL MILLER** Ervwin Rommel and the First World War Origins of Blitzkreig

## Mechanical Engineering I

S&E N205

Moderator: Brad Bruno

- 9:00 | **JONATHAN MIXCUS** Re-Design of Cameroonian Push/Pull Transportation Cart
- 9:20 | **DEARON PANOSSIAN** Design and Construction of a Human Powered Vehicle for Competition
- 9:40 | **LILLA SAFFORD SMITH** Micro-Particle Image Velocimetry of Bi-Slug Flow
- 10:00 | **CHRISTOPHER SMITH** Human Powered Vehicle Challenge

## Mixed I

Olin 307

Moderator: Ron Bucinell

- 9:00 | **KYLE ABRAHAMSON** Investigation of the Crack Propagation of PEDOT: PSS in an organic/inorganic hybrid solar device
- 9:20 | **KATHRYN BERG** Design and Construction of a Bridge Deck Using Composite Materials
- 9:40 | **ANDREW TROCHANOWSKI** Rediscovering Prigg v. Pennsylvania
- 10:00 | **STEPHANIE VACCHIO** The Character And Leadership Style of Lyndon Johnson

## Nanotechnology

Olin 306

Moderator: Mike Hagerman

- 9:00 | **SEAN FITZGERALD** Application of Quantum Dot Molecular Beacons for Real-Time PCR Analysis
- 9:20 | **DARRIN LIAU** Synthesis and Characterization of Anodized Aluminum Oxide
- 9:40 | **CLANCY SLACK** Investigation of Bifunctional Ligand Coordination to Cadmium Selenide Nanoparticles

## Neuroscience I

Olin 106

Moderator: Cay Anderson-Hanley

- 9:00 | **SAMIEH ATIF** The Neuroscience of (Crime and) Punishment
- 9:20 | **MAGGIE MANNING** The Neuropsychological Effects of Combined Physical and Mental Exercise in Schizophrenia
- 9:40 | **AMANDA SNYDER** Virtual and live social facilitation while exergaming: Competitiveness moderates effort
- 10:00 | **VADIM YEROKHIN** Neurophysiological and Neuropsychological Effects of Strengthening Exercise for Cognitive Impairment

## Physics

S&E N304

Moderator: Mike Vineyard

- 9:00 | **PETER BONVENTRE** Atom Trap Trace Analysis on Laser-Cooled Krypton
- 9:20 | **COLIN GLEASON** Comparative Study of Aerosols Using Particle Induced X-Ray Emission
- 9:40 | **CHARLES HARRINGTON** Ion-Beam Analysis of Airborne Pollution
- 10:00 | **MARK SULLIVAN** Analysis of Phase Transitions in High Density Percolation

## Psychology I

Wold 128

Moderator: Dan Burns

- 9:00 | **STEPHANE BOILEAU** The Effects of Death Priming and Survival Processing on Retention
- 9:20 | **SAMANTHA GRIFFITH** Adaptive Memory: Survival Processing
- 9:40 | **NINA JORDAN** The Effect of Cognitive Dissonance and Misinformation on the Recall of Emotional Stimuli
- 10:00 | **JEREMY LEFEBVRE** Is Survival Processing the Same as Death Processing?

## Psychology II

Wold 225

Moderator: Joshua Hart

- 9:00 | **GABRIELLE CONTELMO** The Relationship between Dreams & Attachment Style
- 9:20 | **CASSANDRA DEVITO** The Effect of Priming Attachment Anxiety on Depression and the Mediating Roles of Dysfunctional Attitudes and State Self-Esteem
- 9:40 | **ALYSE DUNN** The Effect of Animation Versus Live Action and Animal Versus Human Film Depictions of Death on Terror Management Processes
- 10:00 | **LYDIA TREAT** Conflicting Norms: Terror Management & Women

## Aerogels

Olin 306

Moderator: Ann Anderson

- 10:30 | **SUZANNE ESTOK** | Translucent Silica Aerogels Prepared by Rapid Supercritical Extraction
- 10:50 | **ROBIN BARABASZ** | Effects of Superhydrophobic Aerogel Surface Coatings on Drag Reduction
- 11:10 | **LAUREN BROWN** | Testing the Photocatalytic Oxidation Abilities of Titania-Silica Aerogels Fabricated Using the Rapid Supercritical Extraction Method
- 11:30 | **NICHOLAS DUNN** | Alumina-based Aerogels as Green Automotive Catalysts
- 11:50 | **JUSTIN RODRIGUEZ** | Investigating the Use of Aerogels in Catalytic Conversion Technologies

## Art History

Arts 215

Moderator: David Ogawa

- 10:30 | **JOANNA COHEN** | Andy Warhol's New York
- 10:50 | **JENNIFER FOX** | Andy Warhol's New York
- 11:10 | **JAMIE LANGWEIL** | Grandeur and Mystery: Union's Collection of Photographs by Carleton Watkins
- 11:30 | **KIRA SIMON** | Exhibition History of The Vienna Secession

## Astronomy

S&E N304

Moderator: Francis Wilkin

- 10:30 | **DANIEL BARRINGER** | Observing Transiting Extrasolar Planets with the Union College Observatory
- 10:50 | **HALLEY DARLING** | Study of Neutral Hydrogen Properties & Membership of the NGC 5846 Group
- 11:10 | **KATELYN O'BRIEN** | Star Formation Properties of the NGC5846 Group of Galaxies
- 11:30 | **LYDA URRESTA** | Heavy element abundances: matching simulations with astrophysical observations

## Biological Sciences I

Bailey 207

Moderator: Nicole Theodosiou

- 10:30 | **ELIZABETH ACKLEY** | Elucidating a role for Hoxd13 during gut development in the chick and skate
- 10:50 | **CHRISTINA BROWN** | Spatiotemporal patterning of mitosis during cyclic blastogenesis in a colonial protochordate
- 11:10 | **ALYSSA SIMEONE** | Evidence of a Rudimentary Colon in *Leucoraja erinacea*
- 11:30 | **ROBERTO WELCH** | The function of Hoxd13 during gut development

## Biological Sciences: Organismal Function

Steinmetz 106

Moderator: Scott Kirkton

- 10:30 | **MICHAEL DANISE** | The physiological tradeoff between cation exchange and photosynthesis in peat mosses
- 10:50 | **LAUREN HENNESSEY** | Using Synchrotron X-Ray Imaging to Visualize Tracheal Changes During Intramolt Development in American Locusts
- 11:10 | **LEAH PEPE** | Measuring spatiotemporal properties of contraction in the amphibian heart
- 11:30 | **RACHAEL SINGLETON** | Color Vision and Color Discrimination in *Anolis sagrei*

## Christians, Jews and Muslims: Cultural Exchanges in Early Modern Spain and "Converso" Culture in the Americas II

Hum 008

Moderator: Pilar Moyano

- 10:30 | **NICOLE ABRAMS** | The Transformation of the Culture of the Sephardic Jews after their Expulsion from Spain in 1492
- 10:50 | **JULLY ARAUJO** | The Islamic Influence on Architecture: From al-Andalus to Latin America
- 11:10 | **SARA BLOCK** | Sephardic Culture Through Music
- 11:30 | **CHRISTOPHER JOHNSON** | Andalusian Physics

## Economics II

Hum 016

Moderator: Fuat Sener

10:30	<b>MICHAEL HAMBLEY</b>	East Asian Responses to US Deficit Spending: A Theory of Conflicted Virtue
10:50	<b>RON KNOX</b>	Reforming The Credit Rating Industry
11:10	<b>SAMUEL LUNDQUIST</b>	Intellectual Property Rights Reform and Foreign Direct Investment
11:30	<b>CHANDNI VAID</b>	Do Medical Technology and Healthcare Spending Affect Health Outcomes?

## Electrical and Computer Engineering

S&E N210

Moderator: Palma Catravas

10:30	<b>NATHANIEL CLARK</b>	A Biometric Fingerprint Scanner with a Locking Mechanism
10:50	<b>AMANDA LAVENPEARL</b>	Observing Overtones in Marimba Bars
11:10	<b>ALEX POST</b>	How to get to Carnegie Hall: real time signal processing
11:30	<b>BENJAMIN SIMS</b>	Q-point Control Test Bed for Atomic Force Microscopy Applications
11:50	<b>AUNG SOE</b>	Data Collection and Communication System for Long Term Deep Water Remote Monitoring

## French II

Hum 014

Moderator: Charles Batson

10:30	<b>BRITTLYN PEARLMAN</b>	French Parenting in Relation to the French Education System
10:50	<b>EVA POGOSIAN</b>	The "Skinny" on French Women: Unhealthy Eating Habits and the French Government
11:10	<b>RAMSEY STEINER</b>	Trop belles pour la science

## Anthropology

Wold 128

Moderator: Linda Cool

10:30	<b>CAROLYN CANETTI</b>	The Effect of the Internet on the Music Industry
10:50	<b>KHUSBOO DESAI</b>	Corruption in the Indian Political System
11:10	<b>PEARL JURIST-SCHOEN</b>	The Impact of Tourism on Local Barbadian Culture
11:30	<b>KEIKO MIMURO</b>	How Asian notions of Romance are influenced by American culture

## Mathematics and Applied Mathematics

Bailey 201

Moderator: Karl Zimmerman

10:30	<b>PETER BONVENTRE</b>	Splitting of Primes in Galois Extensions
10:50	<b>CHARLES HARRINGTON</b>	An Introduction to the p-adic Numbers
11:10	<b>COURTNEY MAFRICI</b>	Square-Triangular Numbers
11:30	<b>STEVEN NEIER</b>	Influence of Elliptical Arcs on Half-Pipe Performances
11:50	<b>WEI YU</b>	Stable marriage and efficient course registration

## Mechanical Engineering II

S&E N205

Moderator: Bill Keat

10:30	<b>SAM BARSTOW</b>	The Development of an Optimized Fit System for a Multi-Sport Outdoor Shoe
10:50	<b>CONOR DODD</b>	Design of an Automated Steering System for Semi-Trailers
11:10	<b>NENAD OPIJAC</b>	The Design and Manufacturing of a Heat Exchanger
11:30	<b>ELIAS SAMIA</b>	Design and Implementation of an Observation-Class Submersible ROV

## Music

Emerson Hall

Moderator: Dianne McMullen

10:30	<b>YUBIN CHOI</b>	Some Lieder by Franz Schubert (1727-1828): A Short Lecture/Recital
10:50	<b>MELANIE WATMAN</b>	Performance of "Madrigale Centonove" by the Union College Camerata Singers

## Neuroscience II

Olin 106

Moderator: Chris Chabris

10:30	<b>CHRISTOPHER CHRONOWSKI</b>	Effect of Sleep on Physiological Response to Academic Stress
10:50	<b>ALEXANDER KATZ</b>	Are Humans Smarter than Rats? Pattern Recognition, Intelligence, and Optimal Behavior in a Binary Choice Task
11:10	<b>STEPHANIE MARTINEZ</b>	Socioeconomic Status & the Neural Correlates of Memory
11:30	<b>KELLY PARKES</b>	Investigating the Stress of Students in the Sorority New Member Process

## Observing Development: Children, Animals & Hipsters

Bailey 312

Moderator: Suzie Benack

- 10:30 | **CLARISSA ODENCE** | Social Behaviors of Preschoolers: A comparison of hearing and hearing-impaired children
- 10:50 | **LIANNE SHEMITZ** | Positive Risk Taking In Children
- 11:10 | **EMILIA STRZALKOWSKA** | Animal-Assisted Therapy: How Therapists Perceive the Role of Animals in Healing Processes
- 11:30 | **ARIA WALFRAND** | Why does everyone hate hipsters?: A psychological examination of a modern American counterculture

## Political Science II

Hum 117

Moderator: Robert Hislope

- 10:30 | **JULIA FALCON** | Post-Independence Responses to Artificial Borders Inherited in the Middle East and Central Asia
- 10:50 | **SAMUEL MERLIN** | Moving Forward in Afghanistan: Refocusing International Aid Activities for Sustainable Nation-Building
- 11:10 | **GEORGIA SWAN-AMBROSE** | Imperial Infringement or Self-destruction? The Demise of the Caribbean
- 11:30 | **CAROLINE TULP** | Democratization & the Role of Social Movements & Elites

## Psychology III

Wold 225

Moderator: Ken DeBono

- 10:30 | **ERIN SCHROTH** | Self-Monitoring and Advertising: Evaluations of Image - versus Quality-Oriented Advertisements for Public v. Private & Public Luxury v. Necessity Products
- 10:50 | **CAITLIN SILVIA** | Terror Management, Self-Monitoring, and Religiosity

## Renewable Energy

Wold 028

Moderator: Rich Wilk

- 10:30 | **KELLY PEARSON** | Design and Production of a Dual Axis Solar PV Tracking System for Electric Vehicle Charging
- 10:50 | **MURPHY POTTER** | Harnessing the Energy of the Wind to Power the Campus Vehicle Charging Station
- 11:10 | **LUCAS TIZIANI** | Design of a Solar Thermal Desiccant Dehumidification System

## Sociology I

Hum 019

Moderator: Deidre Hill-Butler

- 10:30 | **SARAYFAH BOLLING** | Taking Pride in Who We Are: African-American Redefining the Meaning of Black Collectibles in the 21st Century
- 10:50 | **KATHERINE LABRIE** | Incarceration Rates in the United States and its Affect on Children With a Parent in Prison
- 11:10 | **JILLIAN LEVITT** | Perceptions and experiences of mental illness among college students
- 11:30 | **ARKEISHA PACE** | Rethinking Crime and Welfare

## Geology I

Olin 307

Moderator: Holli Frey

- 10:30 | **SHANNON BRADY** | Petrologic conditions of the magma chamber beneath Volcan Baru, Panama recorded by disequilibrium mineral textures
- 10:50 | **DAMON BYRNE** | Assessing responses to the 2010 Deepwater Horizon oil spill in the Gulf of Mexico through trace element analysis of oyster shells
- 11:10 | **REBECCA GRONCZNAK** | Interpreting weathering Rates and Element Mobility using four tephra units of Newberry Volcano, Central OR
- 11:30 | **TYLER WILLEY** | Weathering and Element Leaching of the Mount Mazama Tephra, Oregon USA.

## Classics II

Hum 112

Moderator: Stacie Raucci

- 10:30 | **MATTHEW ANGELOSANTO** | The Political Propertius: Pro- and Anti-Augustan Readings of Propertius 4.1
- 10:50 | **JAMESON DUNNE** | Timor Mortis
- 11:10 | **ALEXANDRA KING** | Lost In Translation: What did Jesus say?
- 11:30 | **RACHEL LALJI** | Tracing Classical Roots of Rhetoric in Modern Day Political Speeches: Rhetoric Today, Tomorrow and Yesterday



## Poster Session

Wold Atrium - 12:20 - 1:50

12:20 - Opening Remarks by President Stephen Ainlay

**Moderators:** Brad Bruno & Joanne Kehlbeck

<b>JACOB LAROCCA</b>	Playing a Musical Tesla Coil
<b>JOSHUA ANDERSON</b>	Design, Construction, and Testing of a Hydraulic Ram Pump
<b>ELI ARNOW</b>	The Design & Analysis of an Indoor Air Biofiltration System
<b>MAXWELL BECTON</b>	Building an Electric Motorcycle
<b>PAOLA BELTRAN</b>	Designing a Mechanical Swing for Paraplegic Children
<b>ANDREW CARPENTER</b>	Chirality of Limonene and Carvone
<b>EVAN CURTIS</b>	Retrofitting Residential Houses into Environmentally Friendly Buildings
<b>DARREN DEL DOTTO</b>	Evaluation of Renewable Energy Systems
<b>PETER DISALVIO</b>	Evaluation of External Insulating Finishing Systems
<b>CAMILA DORIN</b>	GPS Enabled iPod Touch for Skiers
<b>SARA EINHORN</b>	Death and the Body in Tibetan Buddhism & Judaism
<b>LUCAS FIRST</b>	Chemistry, Chinese Culture and Medicine: A Look Inside Traditional Chinese Medicine and the Science Behind It
<b>KATIE HARTNACK</b>	Electrophysiological indices of aesthetically stimulated processes in art-experienced individuals as compared to art-naive individuals
<b>TYLER HECK</b>	The Kinesiology of the Baseball Swing
<b>ANDREW HEITMANN</b>	SAE Aero Design Competition, Controls & Systems
<b>RAYANA JOHNSON</b>	General education laboratory for a culinary course
<b>JASON KLUSKY</b>	Star Formation and Nuclear Activity in Galaxies using ALFALFA and SDSS
<b>JACOB LAROCCA</b>	Design, Testing, and Construction of MIDI Tap Shoes
<b>KAYLA LAWRENCE</b>	Membrane Location of Human Follitropin Receptor
<b>ALEX LEVINE</b>	Simple Yet Secure: User Driven Design of a Technical Support Chat System
<b>AJAY MAJOR</b>	Cloning of the codon-optimized metacaspase gene scp1
<b>TIMOTHY MCGOVERN</b>	SAE Aero Design Competition, Structural
<b>VICTORIA MCINTYRE</b>	Increasing Sustainability on Campus by Composting
<b>ANGELA MCLELLAND</b>	SAE Aero Design Competition, Aerodynamics
<b>DAN MENDELSON</b>	Pedagogical Tool for Usability Science

<b>EMMET O'CONNELL</b>	Design of Motorcycle Front Suspension
<b>NICHOLAS OREN</b>	Design and Fabrication of Rear Suspension and Drivetrain of Union College SAE Baja Car
<b>ANDREW PERSSON</b>	Oil Cooled Computer
<b>EUGENE PLIMPTON</b>	Passive Density-Driven Water Pasteurizer
<b>ALEX RIZZA</b>	Design, Fabrication, & Analysis of a Re-Configurable Stirling Heat Pump
<b>ALEXANDREA SAFIQ</b>	Effects of Physical Confinement to Nano Scale and The Gibbs-Thomson Predictions
<b>JESSICA SOSA</b>	The Re-Design of a Water-Pumping Merry-Go-Round
<b>TAMARA STONE</b>	Grants for the Schenectady Elementary Schools
<b>MARTIN SYSEL</b>	Experimental Study of Savonius Wind Turbine

## MECHANICAL ENGINEERING LARGE PROJECTS DISPLAY

Reamer / Olin Quad - 12:20 - 1:50

### Electric Motorcycle

Max Becton

What does it really take to get off of the gasoline habit and start using electric vehicles? What better way is there to learn about this than to design and build your own electric motorcycle as a senior project? The resulting electric motorcycle will be on display.

### Society of Automotive Engineers (SAE) Baja Car

Nick Oren, Emmet O'Connell, and other team members

Each year the Union College SAE Mini Baja team competes against other top engineering colleges from around the world to design, construct, and race a small, rugged, off road vehicle. This year's newly redesigned mini-Baja car will be on display.

### SAE Aero-Lift Competition Airplane

Angela McLelland, Tim McGovern, Andrew Heitman

The SAE Aero Lift competition challenges student teams from top college engineering programs around the world to design and build a small scale (10' wingspan) airplane with the maximum possible cargo (weight) lifting capacity. This year's "Flying Dutchman" airplane will be on display.

### Robotic Semi Trailer Steering Test Rig

Connor Dodd

A large robotic test bed designed to test a novel new intelligent steering concept for multi tractor trailer systems will be on display.

### ASME Human Powered Vehicle Challenge Vehicle

Dearon Panossian & Chris Smith

The American Society of Mechanical Engineers Human Powered Vehicle Challenge is a National competition where teams design, construct and race vehicles, powered only by human muscle. This year's vehicle will be on display.

## Biological Sciences II

Bailey 207

Moderator: Barbara Danowski

2:00	<b>JOHANNA GEOGHEGAN</b>	Presence of Follicle Stimulating Hormone Receptor in Lipid Rafts
2:20	<b>BRIAN GOLDMAN</b>	Membrane microdomain dependence of FSH receptor activation
2:40	<b>YAW KWARTENG</b>	Changes in the Pattern and Amount of Microtubule Acetylation in Response to ATP Depletion
3:00	<b>MELISSA PINCHINAT</b>	Mutagenesis of the FSH receptor caveolin interaction motif

## Classics III

Hum 112

Moderator: Stacie Raucci

2:00	<b>KATHLEEN JORDAN</b>	Evolution of Religion in Ancient Greece
2:20	<b>KATHLEEN SMITH</b>	Death in Vergil

## Computer Science I

Olin 107

Moderator: John Rieffel

2:00	<b>DAVIS KNOX</b>	Evolving Soft Robot Locomotion Through Genetic Algorithms
2:20	<b>BENJAMIN LYNCH</b>	Crowd Control: Harnessing the Wisdom of the Crowd to Trade
2:40	<b>IAN MELNICK</b>	A Parallel File System for Flash
3:00	<b>PAUL TUNISON</b>	Evolution of Flow in Games

## Economics III

Hum 016

Moderator: Younghwan Song

2:00	<b>LUKE CAIN</b>	Shirking in the National Hockey League
2:20	<b>EMILY LACROIX</b>	Applying Fair Division to Global Carbon Emission Allowances
2:40	<b>HARITHA SISHTLA</b>	The Sex Generation: The impact of teen attitude, views, and knowledge of contraceptives and sexual activity on the teen pregnancy and STD rates in the United States
3:00	<b>SAMUEL YOON</b>	Regional Variation in the Length of Hospital Stay and Insurance Coverage

## English Honors Theses I

Hum 014

Moderator: Judy Lewin

2:00	<b>AMELIA ENDO</b>	Explorations of the Ordinary
2:20	<b>EMMA KROSSCHELL</b>	"To be alive -- is Power": Fuller's Feminine Ideal Realized in Dickinson's Poems
2:40	<b>M. DANIELLE MENDIOLA</b>	The Horror is Part of the Truth: Atavism and Secret-Keeping in Stoker's Dracula and Stevenson's Strange Case of Dr. Jekyll and Mr. Hyde.
3:00	<b>SARAH O'CONNOR</b>	The Adolescent Girl in the Postfeminist World: Rethinking the Impact of Popular Chick-Lit Fiction

## Environmental Science

Olin 306

Moderator: Laura MacManus-Spencer

2:00	<b>SARAH BERCOVICI</b>	Photodegradation of octyl dimethyl para-amino benzoic acid, a commercially produced sunscreen chemical
2:20	<b>ALISON KRACUNAS</b>	Aqueous Photolysis of the Ultraviolet Filter Chemical Octyl Methoxycinnamate
2:40	<b>TREVOR PORTER</b>	Investigating the Biodegradability of Biodiesel in Lake George Environment

## Geology II

Olin 307

Moderator: John Garver

2:00	<b>TYLER IZYKOWSKI</b>	Thermochronology and tectonic evolution of the Paleocene-Eocene Orca Group of the Prince William terrane, Alaska
2:20	<b>EDWARD MILDE</b>	Tectonic Evolution of the Campanian-Maastrichtian Valdez Group of the Chugach terrane, Alaska
2:40	<b>ELIZABETH MORGAN</b>	Geochemistry and petrology of big garnet amphibolites at Gore Mtn. and Warrensburg, NY

## Parks & Pollution: Twentieth Century Environmental History

Wold 128

Moderator: Andy Morris

2:00	<b>GREGORY CANNILLO</b>	Old Father Hudson: The Three Phases of Environmental Activism in the Hudson River Valley.
2:20	<b>ELIZABETH SARGENT</b>	The Darker Side of America
2:40	<b>RICHARD STEELE</b>	The Proliferation of the Automobile and its Effect on Park Policy at Yosemite National Park

## Mathematics

Bailey 201

Moderator: Susan Niefeld

- 2:00 | **ANDREA MAROIS** | Logics of Knowledge: Applications to Game Theory and Voting Theory
- 2:20 | **STEVEN NEIER** | Analysis of the SIR Model with Applications to Current Infectious Diseases
- 2:40 | **COURTNEY PHILLIPS** | Lattice Theory
- 3:00 | **LYDA URRESTA** | The History and Mathematics Behind the Construction of the Astrolabe

## Mixed III

Arts 215

Moderator: Seyffie Maleki

- 2:00 | **ELIZABETH BOCCHINO** | Comparison of Horizontal Ground Source (Geothermal) Heat Pump Layouts for Optimal Performance and Thermal Efficiency
- 2:20 | **AVERY GRAY** | Fallingwater: Model and Analysis
- 2:40 | **MITCHELL LEE** | Design and Fabrication of an Autonomous Solar Powered Airship
- 3:00 | **JOHANNAH RYAN** | Red Is The New Green: Color Expression of Cobalt, Copper, and Iron Pigments on Pottery Surfaces

## Mixed IV

S&E N210

Moderator: Lewis Davis

- 2:00 | **ANDREW DAVIS** | The Tea Party Movement: Political, Personal, and Media Perceptions of a Conservative Movement in the United States
- 2:20 | **DAVID FRASZ** | Megabytes and Megateens: Computer Use, Broadband Availability, and Obesity
- 2:40 | **SCHUYLER HOOPER** | Culture, Macroeconomic Adjustments and Economic Growth
- 3:00 | **SKY KOCHENOUR** | Religion and Political Order: Are Their Functions Similar?

## Movie

Reamer Campus Center Auditorium

Moderator: Janet Grigsby

- 2:00 | **SHABANA HOOSEIN** | The Big (Ain't So) Easy: A Volunteer Story

## Neuroscience III

Olin 106

Moderator: Rob Olberg

- 2:00 | **AUTUMN ARONS** | Binocular interactions in visual inputs to flight control neurons in the dragonfly
- 2:20 | **MELANIE LOLIER** | Neural basis for discerning prey from predator in dragonflies
- 2:40 | **VICTORIA MATHIEU** | Dragonfly Neuronal Responses to Looming Targets

## Psychology IV

Wold 225

Moderator: Ken DeBono

- 2:00 | **REBECCA HOFFENBERG** | Religious Motivation
- 2:20 | **RACHEL LAZARUS** | Do good things come to those who wait? The role of delayed gratification and individual differences in consumer purchasing decisions
- 2:40 | **ELIZABETH PAUL** | The Effects of Self-Monitoring and an Audience on Cognitive Dissonance
- 3:00 | **AMANDA SAMUELS** | The Influence of Personality on Intentions to Exercise: Do Conscientiousness and Extraversion Moderate the Constructs of the Theory of Planned Behavior?

## The Psychology of Attitudes and Behavior

Bailey 312

Moderator: George Bizer

- 2:00 | **ALLISON JEKOGIAN** | Social Dominance Orientation & The Belief in a Just World: Relation to Stigma Towards Mental Illness
- 2:20 | **SLOANE SHELDON** | What's More Persuasive? How the Internet and Newspaper Change Opinions
- 2:40 | **LYDIA TREAT** | Mental health stigma on college campuses: The usage and attitudes towards Union College
- 3:00 | **KSENIYA ZHUZHA** | Attributing Mind to Others: The Role of Dispositional Walking Speed

## Applied Ecology

Bailey 201

Moderator: Kathleen LoGiudice

- 3:30 | **GABRIELLE BAIMAN** | Species survival through ex situ conservation strategies and reshaping public attitudes
- 4:10 | **NICHOLAS HOBERMAN** | Parasite Richness and Intensity in Urban versus Rural Eastern Chipmunks and Grey Squirrels
- 4:30 | **SHABANA HOOSEIN** | Forest Regeneration in an Abandoned Clayplain Pasture
- 4:50 | **SUZANNE OSTROW** | The Relationship between Tick Body Burden and Intestinal Parasites in Three Squirrel Species

## Baseball in the American Experience

Hum 112

Moderator: Denis Brennan

- 3:30 | **CHRISTIAN GARCIA** | The Role of Statistics in Modern Baseball
- 4:10 | **MICHAEL MULLEN** | Our Game: The Popularity of Baseball in America
- 4:30 | **DANYA SHABI** | Evolution of the Baseball Card

## Biochemistry

Wold 128

Moderator: Margot Paulick

- 3:30 | **MATTHEW HANLEY** | Metacaspase gene function in the mushroom fungus *Schizophyllum commune*
- 4:10 | **MICHELLE RICHTER** | Cloning and Expression of Putative Metacaspases from *Schizophyllum commune*
- 4:30 | **SAMANTHA TRAVER** | Development of a robust genetic test for hyperkalemic periodic paralysis (HYPP) in quarter horses
- 4:50 | **ZELIANG ZHENG** | Expression and Enzymatic Activity of a Putative Metacaspase Gene from *Schizophyllum commune*

## Sociology

Hum 019

Moderator: Janet Grigsby

- 3:30 | **MATTHEW CATALDI** | Blessing or Curse: How Those Who Host the Olympics Control their Destiny
- 3:50 | **FREDDIE DANTUS** | Rap Music and its Impact on White Youth
- 4:10 | **MARISSA GORDON** | Rehabilitating Criminals: Case Studies of Three Innovative Programs
- 4:30 | **MARISA KWOCZKA** | Life After the Gulf Oil Spill: the Survival of People and the Wetlands

## Chemistry

Olin 306

Moderator: Jim Adrian

- 3:30 | **HYEON HWANGBO** | Coordination reactions with new thiazoline and thiazole type ligands
- 3:50 | **KATHERINE MORRIS** | Monitoring Structural Details of the Solid Phase Synthesis of Peptoid Foldamers
- 4:10 | **BOWMAN POTTER** | Progress Toward a Secondary Amine Catalyzed aza-Michael addition of Ketones
- 4:30 | **KELLY ZEBROWSKI** | Synthesis and characterization of Cu(II) and Co(II) thiazoline and thiazole complexes and their interaction with DNA

## Computer Science II

Olin 107

Moderator: John Rieffel

- 3:30 | **DAVIS BARBER** | Effects of Display Size on Embodied Conversational Agent Interactions
- 3:50 | **RACHEL HOGUE** | Statistical Analysis and Comparison of Texts in Ancient Greek

## English Honors Theses II

Hum 014

Moderator: Brian Hauser

- 3:30 | **DANIEL KASON** | The Leech World
- 3:50 | **ELSA PERUSHEK** | Sex, Text, and Screen: Kubrick's Adaptation of Sexually-Explicit Scenes from Text to Film
- 4:10 | **JILL RADWIN** | "If you label it this, then it can't be that": Revisiting New Journalism in Mailer, Didion, and Wolfe
- 4:30 | **REBECCA SEEL** | Robots Are People Too: Humans, Cylons, and Posthumanism in "Battlestar Galactica"

## Biological Sciences III

Bailey 207

Moderator: Quynh Chu-LaGriff

- 3:30 | **ISAIAH BUCHANAN** | Ecological relationships between a native lizard species and an invasive introduced lizard species
- 3:50 | **ALICIA LEE** | The Role of MC-1R in Color Polymorphisms of *Plethodon cinereus*
- 4:10 | **PATRICK O'HERN** | Investigation of Ppt2 and Ppt1 RNAi knock-down and gene interactions during *Drosophila* neurogenesis
- 4:30 | **KATHLEEN SMITH** | Color polymorphisms & the role of the melanocortin-1 receptor (MC-1R) in *Plethodon cinereus*

## Geology III

Olin 307

Moderator: Don Rodbell

- 3:30 | **DAENA CHARLES** Paleolimnology and Paleoclimate Environment Revealed through Holocene Lake Shore Sediments from Lake Hovsgol, Mongolia
- 3:50 | **KAITLIN CLARK** Sedimentary provenance and paleoflood history of the Mohawk River as recorded in Collins Pond, Scotia, NY
- 4:10 | **JONATHAN GRIFFITH** A continuous Late Holocene record of paleoclimate change from Grinnell Lake sediment cores, Glacier National Park, Montana

## Latin American and Caribbean Studies

S&E N210

Moderator: Teresa Meade

- 3:30 | **ARIANA AWAD** Women Against Dictatorship and Repression
- 3:50 | **SHELBY CUTTER** When they beat up a kid
- 4:10 | **LELAND GARIVALTIS** The Misrepresentation of the FARC-EP

## Mixed II

Bailey 312

Moderator: David Hodgson

- 3:30 | **KEVIN JUNG** Design of an internally powered assist chair for the elderly
- 3:50 | **KATHERINE LAMB** Ephedra Usage in the United States
- 4:10 | **BRIDGET LITTLE** A Recycled Rubber Sandal Press for Loisaba, Kenya
- 4:30 | **RYAN OWEN** Greener Pastures: Charter Schools & the Competition for Teachers in New York City
- 4:50 | **JODI SCHWARTZ** Using digital recognition and imaging to separate plastics thrown in a trashcan

## Political Science III

Hum 117

Moderator: Lori Marso

- 3:30 | **ALEXANDER BROCKWEHL** Toward the Democratic Ideal: Conceptualizing Freedom in America
- 3:50 | **JORDAN GOLDMAN** The effect of public approval levels of Congress on midterm elections
- 4:10 | **KATHERINE MACEWAN** After the Studio: The Political Influence of Visual Imagery

## Mixed V

Arts 215

Moderator: Jill Murphy

- 3:30 | **CEILLIE CLARK-KEANE** Adolescent Depression in Literature
- 3:50 | **ROBERT CONNELLY** Modern Day Political Social Networking: An Ethnographic Study of the affects of Social Media at Union College
- 4:10 | **ERIC HO** The History and Philosophy of the Martial Arts
- 4:30 | **REBECCA WENTWORTH** Developing Methods to Manufacture Waste Plastics into Tarpaulin in 3rd World Countries

## Neuroscience IV

Olin 106

Moderator: Steve Romero

- 3:30 | **DEIRDRE FINNEGAN** Hemispheric Specialization for Music and Language Processing: A Dichotic Listening Study using EEG
- 3:50 | **LAUREN LAITMAN** Repetitive transcranial magnetic stimulation for tinnitus suppression: a voxel based morphometry study
- 4:10 | **CAITLIN MINER** Investigation of the Temporal Characteristics of Absolute Pitch and Relative Pitch Using EEG

## Psychology V

Wold 225

Moderator: Chris Chabris

- 3:30 | **KELSEY ALBERT** Lifespan Physical Activity: Role of Flow and Other Factors Among Older Skiers
- 3:50 | **JULIA DIMITROVA** A Cross-Cultural Perspective on Dementia Caregiver Issues Related to Attitudes Toward Treatment and Quality of Care
- 4:10 | **JACLYN MANDART** Inferring Collective Intelligence by Observing the Behavior of Groups
- 4:30 | **ANDREW MCKEEGAN** Does Mozart Make You Smarter, or Does Silence Make You Dumber?
- 4:50 | **CARLY WENDER** Do Athletic Coaches Believe in the Hot Hand Fallacy?

## Economics IV

Hum 016

Moderator: Tomas Dvorak

- 3:30 | **JACQUELINE BARTLEY** What Drives Financial Literacy Among the Young?
- 3:50 | **PAUL GOBRON** Healthcare Reform and the Labor Market: Estimating the Effect of a Health Insurance Mandate on Employment
- 4:10 | **JOHN SIMPSON** The Impact of the 2005 Collective Bargaining Agreement on Competitive Balance in the NHL

## DANCE PERFORMANCES

Faculty Sponsor & Show Director - Miryam Moutillet

4:00 P.M. | **NOTT MEMORIAL**

### DANCE EXPERIENCE COURSE

Created and performed by Maria Dreeszen, Danielle Kreig, Jenna Langhans, Zoralys Molina, Ginamarie Mule, Robin Panella and Kaitlyn Thoen

### DANCE PROJECTS

#### OM PRANAVA

Danced by Shilpa Darivemula

#### ROLLICKING

*Choreographed by Julia Friedman*  
Danced by Julia Friedman and Ginamule

#### RHYTHM IN MOTION

Improvisation live by Jacob LaRocca

#### HO NGUYET CÔ HÓA CÁO

Danced by Emily Lnenicka

#### CAFE BREAK

*Choreographed by Jessica Nagourney*  
Danced by Jenna Langhans & Jessica Nagourney

#### MEMORIES

*Choreographed and danced by Alyssa Simeone*

#### AFRICAN DANCE FUSION

*Choreographed by Ofori-Kyerewah*  
Danced by Isabel Camacho, Owusu Mensah, Jasmine Nance, Jennifer Ofori-Kyerewah, Kadiatou Tubman, Dana-Kae Wals, Ruthlove Wroseoyea Kwarteng and Diana Yawa-Tetty

#### TRUTHS OF REVERIE

*Choreographed by Ayanna Vinson-Dobson*  
Danced by Kendall Allen, Suraiyah Abdul-Wahab, Ackeem Hill, Kadiatou Tubman, Andrew Vinales and Ayanna Vinson-Dobson

#### LET'S KEEP ON ROLLIN

*Choreographed by Amanda Wiener*  
Danced by Anna Finlay, Jenna Langhans, Emily Lnenicka and Amanda Wiener

### DANCE TEAM

*Captains Rachael Singleton and Robin Panella*

### TONIGHT

Mallory Bichunsky, Amy Cerini, Yubi Choi, Sarah Darsigny, Krystle Gallo, Steph Hopp, Jenna Langhans, Samantha Moyer, Jessica Nagourney, Robin Panella, Meridith Prescott, Rachael Singleton, Kaitlyn Thoen and Amanda Wiener

### BALLROOM DANCE CLUB

*Choreographed by Amber Woerner*

Keefe Askin, Peter Aspinall, Peter Bonventre, James Cernik, Alyse Dunn, Julia Falcon, Cherilyn Gordon, Kate Kaminski, Lily Safford, Alyssa Simeone, Zach Smith, Andrew Vinales, Margaret Wilson and Adam Zinman

### THE BHANGRA UNION

Performed by Vishnu Dosakayala, Catherine Elliott, Ayon Ibrahim, Mourin Kamal, Faraz Khan, Kirandeep Kaur, Vaishali Parkash, Jeswinder Paul, Mimi Richards, Jessica Sarrantonio, Shalini Singaravelu, Cenovia Valdez, Aria Walfrand, Alexandra Weisse and Omer Zaidi

### JAZZ, RHYTHM, AND LYRICAL

Choreographed by Marcus Rogers

### GAGALESQUE

Mallory Bichunsky, Anna Finlay, Krystle Gallo, Jenna Langhans, Samantha Moyer, Jessica Nagourney, Emily Lnenicka, Alyssa Simeone, Kaitlyn Thoen and Amanda Wiener

### LOVELY CORPORATE AMERICA

Peter Bonventre, Jacob LaRocca, Sheri Park, Jasmine Roth and Ayanna A. Vinson-Dobson

### I WANNA HOLD YOUR HAND

Katherine Beale, Mallory Bichunsky, Ariel Blum, Alyssa Feldman, Anna Finlay, Julia Friedman, Danielle Kreig, Jenna Langhans, Keiko Mimuro, Ginamarie Mule, Jessica Nagourney, Sheri Park, Kimberly Perry, Eva Pomichalova, Jasmine Roth, Jennifer Silvershein, Alyssa Simeone, Rachael Singleton, Kaitlyn Thoen and Amanda Wiener

## FRIDAY, MAY 13

8:00 P.M. **MEMORIAL CHAPEL**

<b>Madrigale Centonove</b>	(Melanie Watman '13)
<b>Between the Devil and the Deep Blue Sea</b>	(Arlen/Koehler)
<b>L-O-V-E</b>	(Kaempfert/Gabler)
<b>At a Georgia Camp Meeting</b>	(Kerry Mills)
<b>Unraveling Coattails</b>	(Greg Bloom '11)
<b>You're Nobody 'Til Somebody Loves You</b>	(Morgan/Stock/Cavanaugh)
<b>This Was for Me</b>	(Saul Kurtz '11)
<b>Norwegian Wood</b>	(Lennon/McCartney)
<b>Moonglow</b>	(Hudson/Mills/DeLange)
<b>Java Jive</b>	(Drake/Oakland)
<b>Embraceable You</b>	(Gershwin/Gershwin)

## THE UNION COLLEGE JAZZ ENSEMBLE

Tim Olsen, Director

<b>FLUTE</b>	Greg Bloom '11	<b>VIOLA</b>	Colin Turley '13
<b>CLARINET</b>	Emma Freter '13 Alex Post '11	<b>VIBES</b>	Amanda Laven '13
<b>SAX</b>	Kim Blecich '13 Greg Bloom '11 Peter Bonventre '11	<b>PIANO</b>	Sam Solomon-O'Connell '13 Ben Wolkon '13
<b>HORN</b>	Jessica Rivetz '14	<b>GUITAR</b>	Dave Carabis '13 Sean Fitzgerald '11 Saul Kurtz '11
<b>TRUMPET</b>	Sid Zack	<b>BANJO</b>	Dave Carabis '13
<b>TROMBONE</b>	Art Duncan Jacob LaRocca '12 Jeremy Smith '14	<b>BASS</b>	Shelby Cuomo '13
<b>BARITONE</b>	Paul Bonolo	<b>DRUMS</b>	Shon Butani '14 Elliot Feld '14
<b>VIOLIN</b>	Amanda Laven '13	<b>VOCALS</b>	Jessica Rivetz '14 Ulcha Ulysse '13

## THE UNION COLLEGE CAMERATA SINGERS

Prof. Victor Klimash, Conductor  
Prof. Palma Catravas, Accompanist

<b>SOPRANO</b>	Eliana Lakritz '12 Alethea Schepperly '12 Samantha Stagias '14	<b>TENOR</b>	Connor Barrett '14 Colin Turley '13
<b>ALTO</b>	Faryn Freireich '11 Kathryn Long '12 Melanie Watman '12	<b>BASS</b>	Will Callanan '14 Adam Dear '14 Evan DeFilippo '14 Alistair Phaup '14 Samuel Williams '13

## VISUAL ARTS EXHIBITION

Burns Arts Atrium Gallery, Arts Building

Exhibition of the best student work of the year, chosen by the Studio faculty of the Department of Visual Arts.

### PHOTOGRAPHY

Sponsor: *Martin Benjamin*

Amanda Wald, Sarah Bacon, Hillary Zelson, Olivia Joyce, Sheri Park, Erica Antman, Jafar Johnson, Elise DiMeo, Robert Meeson, Long Xie, David Leung, Avery Gray

### PRINTMAKING: ETCHING

Sponsor: *Sandy Wimer*

Amanda Purner, Melody Williams, Scott Traylor, Carolyn Canetti

### PRINTMAKING: RELIEF

Sponsor: *Sandy Wimer*

Claire Foster, Anne Terkovich, Sophia Tamura, Conor Donahoe, Carolyn Canetti, Tucker Diestel, Liang Li, Dan Ni Cao

### DRAWING

Sponsor: *Sandy Wimer*

Hilary Zelson, Elana Vetrano, Christina Mazzei, Avery Gray, Jacqueline Smith, Jamie Gunzenhauser, Erica Brooks, Amanda Purner, Elana Vetrano, Christina Mazzei, Avery Gray, Jacqueline Smith, Jamie Gunzenhauser, Brittany Gilbert

### SCULPTURE

Sponsor: *Chris Duncan*

Emily Bluth, Dan Ni Cao, Grace Carroll, Mikaela Coburn, Jacob Ezratty, Danielle Lussier, Reshad Mahmud, Vishnu Gollakota, Nick Oren, Lucas Tiziani, Avery Gray, Amanda Wald, Melody Williams

### DRAWING

Sponsor: *Walter Hatke*

Connor Barrett, Kate Foley, Jamie Gunzenhauser, Miriam Hammer, Oscar Hernandez, Daniel Moldwin, Olivia Townsend, Robert Wagner, Deanna Zembrzuski

### PAINTING

Sponsor: *Walter Hatke*

Annora Brennan, Nicole Cirelli, Vishnu Gollakota, Benjamin Lawrence, Kate MacEwan, Elsa Perushek

### DIGITAL ART

Sponsor: *Fernando Orellana*

Amin Meyghani, Elise Malkin, Amanda Wald, Neena Jube, Emma Freter, Adam Pere, Sheri Park, Crisitian DiBernardo, Camila Dorin, Christina Mazzei, Hiromu Enoki, Jacqueline Smith, Kelli Lovdahl, Liang Li, Carlon McPherson

## The Arnold I. Bittleman Memorial Prize Exhibition

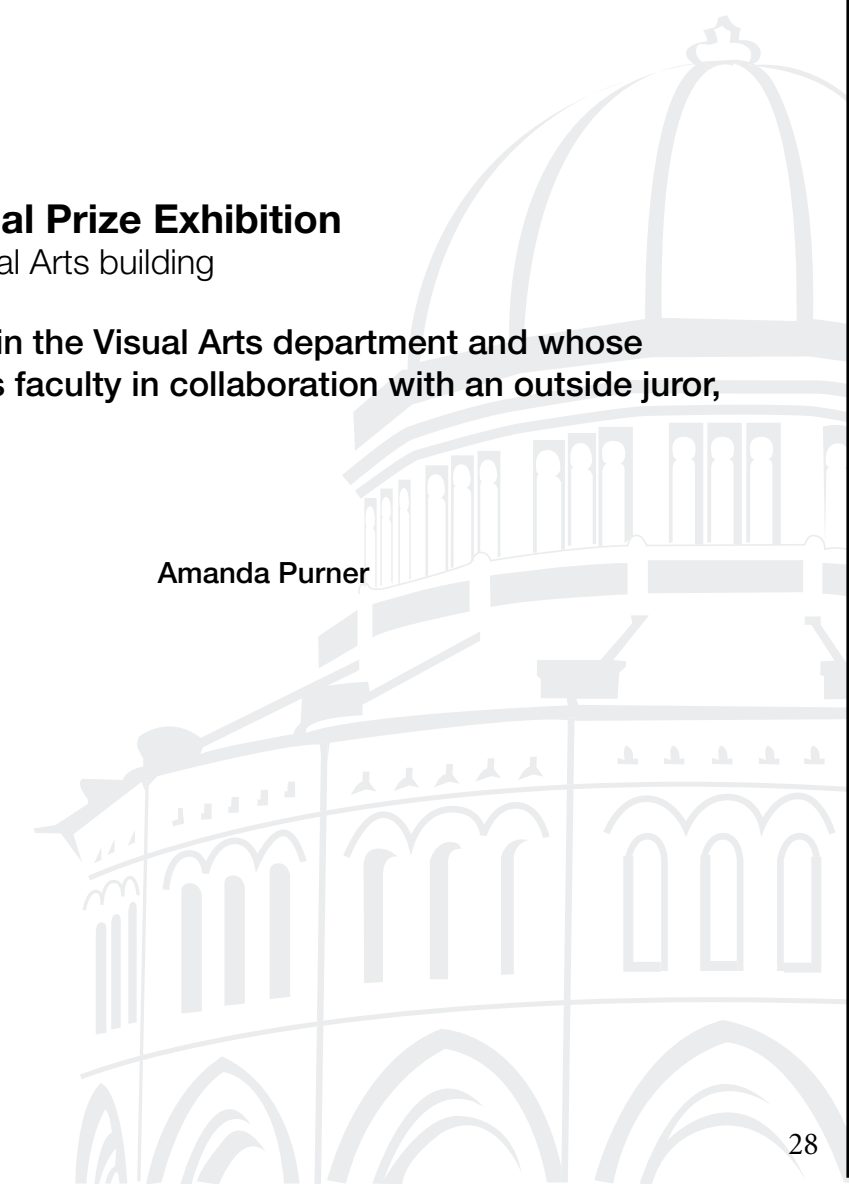
2nd Floor Hallway Drawing Gallery, Visual Arts building

To a student who has studied drawing in the Visual Arts department and whose work, in the judgment of the Visual Arts faculty in collaboration with an outside juror, is outstanding.

### PRIZE WINNER

2010

Amanda Purner





**NOTES**

**NOTES**



**NOTES**

**NOTES**





## NOTES