



5.12.17

THE CHARLES PROTEUS
STEINMETZ
SYMPOSIUM

UNION
COLLEGE
FOUNDED 1795

UNDERGRADUATE RESEARCH AT UNION

A CELEBRATION OF DISCOVERY

Hands-on, faculty-mentored undergraduate research is at the heart of a Union education.

Working closely with their professors—in classrooms, labs, studios, archives and in the field—Union students delve into topics that inspire and challenge them intellectually and creatively.

For one day each spring, the College suspends classes so that students can share their academic interests and talents in the Steinmetz Symposium: a campus-wide celebration with peers, professors and families.

Held annually since 1991, the symposium features an extensive array of oral presentations, posters, performances and exhibits. The day is part of Union's Recognition Weekend, which includes Prize Day on Saturday, a tribute to student achievement in all fields.

The Steinmetz Symposium celebrates a culture of personal discovery that for the past 26 years has integrated coursework, faculty mentorship and peer collaboration to deepen students' understanding of subject and self.

Charles Proteus Steinmetz

ELECTRICAL ENGINEER | EDUCATOR | INVENTOR

The Steinmetz Symposium is named for one of the College's most renowned faculty members, Charles Proteus Steinmetz (1865-1923), who taught electrical engineering and applied physics. Also a chief engineer for General Electric Co., he was widely regarded as America's leading electrical engineer and, after Thomas Edison, perhaps the most recognized name in the field.

Among his many contributions, Steinmetz fostered the development of alternating current, which made possible the expansion of the nation's electric power industry.

Born Carl August Steinmetz in Breslau, Germany (now Wroclaw, Poland), Steinmetz studied in Breslau, Zurich and Berlin, pursuing a broad course of scholarship that included astronomy, biology, chemistry, electricity, physics and political economy.

He received his Ph.D. in 1888 and was forced to flee Germany after writing a paper critical of the government. He settled in New York City, where he developed the law of hysteresis, which enabled

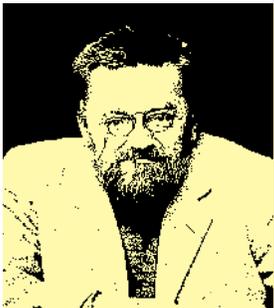
engineers to design better electric motors for use in industry. He joined General Electric Co. in 1892 and relocated to Schenectady.

In 1902, he became professor of electrical engineering at Union. Three years later, he took charge of Union's new electrical engineering program.

After World War I, Steinmetz ceased lecturing at Union, but he remained an active friend of the College the rest of his life.

Active in the community, he chaired the city's school board and parks commission. He also served as president of the Common Council.

A 1914 "Duplex Drive Brougham" Detroit Electric automobile that belonged to Steinmetz is on permanent display in the first-floor corridor between the Wold and Olin buildings. Steinmetz and Thomas Edison are memorialized in statues along Schenectady's Erie Boulevard.



SCHEDULE OF EVENTS

FRIDAY, MAY 12: STEINMETZ SYMPOSIUM

9 A.M. – 5 P.M.

■ **THE CHARLES PROTEUS STEINMETZ SYMPOSIUM**

Presentations on student creative, scholarly and research achievement. Programs and information available in Schaffer Library, inside the north entrance to Karp Hall, inside the north entrance to Lippman Hall, inside the entrance to the Feigenbaum Center for Visual Arts, and inside the entrance to the Wold Center.

STUDENT PRESENTATION SESSIONS BEGIN AT 9 A.M.

5 – 6:30 P.M.

■ **STEINMETZ SYMPOSIUM RECEPTION**

Cash bar and light refreshments.

For presenters, their parents, alumni, guests and faculty sponsors.

LALLY READING ROOM, SCHAFFER LIBRARY

A selection of posters presented by student researchers at national professional society meetings during the 2016-2017 academic year will be posted outside of the Lally Reading Room.

8 P.M.

■ **THE UNION COLLEGE CHOIR**

■ **THE UNION COLLEGE AND COMMUNITY ORCHESTRA**

MEMORIAL CHAPEL

SATURDAY, MAY 13: PRIZE DAY

11 A.M. – NOON

■ **PRESENTATION OF PRIZES AND RECOGNITION**

MEMORIAL CHAPEL

IMMEDIATELY FOLLOWING

■ **PRIZE DAY RECEPTION**

REAMER CAMPUS CENTER PATIO

2 P.M.

■ **UNION COLLEGE JAZZ ENSEMBLE**

EMERSON AUDITORIUM, TAYLOR MUSIC CENTER

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STEINMETZ CONCERT 8 P.M.		30

■ Saturday, May 13

UNION COLLEGE JAZZ ENSEMBLE 2 P.M.		31
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THE CONVENIENCE STORE WILL BE OPEN:

Friday, 8:45 A.M. – 11 P.M.
 Saturday, 10:30 A.M. – 11 P.M.
 Sunday, 11 A.M. – 11 P.M.

THE BOOKSTORE WILL BE OPEN:

Friday, 8:45 A.M. – 4:30 P.M.
 Saturday, 10:30 A.M. – 3:30 P.M.
 Sunday, closed

THE NOTT MEMORIAL WILL BE OPEN:

Friday, 10 A.M. – 6 P.M.
 Saturday, 10 A.M. – 6 P.M.
 Sunday, 10 A.M. – 6 P.M.

SCHAFFER LIBRARY WILL BE OPEN:

Friday, 8 A.M. – midnight
 Saturday, 10 A.M. – midnight
 Sunday, 10 A.M. – 2 A.M.

A HOSPITALITY STATION SERVING LIGHT SNACKS AND BEVERAGES IS AVAILABLE IN THE SCHAFFER LIBRARY.





THE CHARLES PROTEUS
STEINMETZ
SYMPOSIUM

ANNUAL STEINMETZ STUDENT ART EXHIBITION 2017

9 A.M. – 4:30 P.M. ■ CROWELL AND WEST GALLERIES IN THE FEIGENBAUM CENTER FOR VISUAL ARTS



This exhibit is free and open to the public. Please see the gallery guide for a complete listing of all exhibitors and works.

The Annual Steinmetz Symposium Visual Arts Student Exhibition will be held in the Crowell and West Galleries in the Feigenbaum Center for Visual Arts. The exhibition concludes on May 14, 2017.

The following students are included in a group exhibit curated by the Visual Arts faculty, which represents outstanding work from 2016-2017 in the media of drawing, painting, printmaking, photography, sculpture, and digital art

PRINTMAKING

Elizabeth Andonie
Sarah Chang
Frank Chiarulli
Morgan Clark
Emily Dahlstrom
Emily Fiore
Emily Kirsch
Caroline McGuire
Samantha Miller
Lindsey Sepe
Yuki Shimano
Nathan Singer
Andrew Tullo
Xiaozhi Yang

DRAWING

Ari Bennett
Kwesi Blankson
Lauren Capron
Sophie Eydenberg
Emily Fiore
Samantha Miller
Galen Moynihan
Sophia Potter
Ian Scilipoti

PAINTING

Hein Htet (Thomas) Aung
Olivia Estes
Virginia Goggins
Abigail Golodik
Nicole Shauffer
Nathan Singer
Yuanqing Zhu
Kelly Xi

PHOTOGRAPHY

Frank Chiarulli
Rachel Clement
Matt Coffin
Julia Delaney
Emma Hart
Audrey Hunt
Kevin Jordan
Rachel Meyers
Samantha Miller
Laura Mueller
Carlos Piedad
Amy Provost
Hadley Richards
Sophie Rosen
Lindsey Sepe

Ryann Shadick
Davina Tran
Lili Wang
Gangliang Zhao

DIGITAL ART

David Blakelock
Ann Bond
Natalya Brill
Lauren Capron
Lisa DeMoranville
Quinn Devlin
Lauren Elder
Jessica Goldberg
Abigail Golodik
Mark Hilbert
Gamze Inanc
Brendan Laing
Nicholas Lockwood
Samantha Miller
Rachel McNeil
Ian Scilipoti
Jacqueline Seltzer
Kelly Xi

Michael Adams
Noemie Bechu
Brendan Cheevers
Lauren Elder
William Enberg
Virginia Goggins
Kevin Jordan
Claire Lockwood
Rachel Meyers
Samantha Miller
Joseph Noonan
Gabrielle Polott
Valerie Purcell
Nathan Singer
Devon Webster
Niuniu Zhang
Yizhou Zhuang

SCULPTURE/3D DESIGN



SESSION I

9 –10:20 A.M. ■■ CONCURRENT ORAL PRESENTATIONS

KARP 002

ANTHROPOLOGY I

MODERATOR: MICHELLE OSBORN

9 A.M. // OLIVIA WATMAN

Navigating Real Gluten Free: An Analysis of the Experience of Non-Celiac Gluten Sensitivity (NCGS)

9:20 A.M. // ASTRID VARGAS

Examining the Structural Forces behind “Natural” Disasters: A Louisiana Case Study

9:40 A.M. // KERIANN MACKEY

The Stigma of Opioid Addiction

KARP 005

BIOCHEMISTRY I

Moderator: Nicole Theodosiou

9 A.M. // JUSTIN FLEISCHER

Mutation of Follicle Stimulating Hormone Receptor Putative Caveolin Binding Motif Results in Altered Signaling

9:20 A.M. // SAMANTHA FRYE

Gene Expression in the Development of the Little Skate, *Leucoraja erinacea*

9:40 A.M. // GREGORY GEISEL

Quantification of hFSHR Signaling to Determine Dependence of Lipid Raft Residency

WOLD 128

COMPUTER SCIENCE

MODERATOR: KRISTINA STRIEGNITZ

9 A.M. // FRANK CHIARULLI

Controlling 3D Printers with Artificial Neural Networks

9:20 A.M. // JOHN PETERSON

Measuring the Complexity of ANN-produced Evolutionary Designs

9:40 A.M. // JOSHUA WASSERMAN

Accurately Simulating the Battle of Thermopylae to Analyze “What-If” Scenarios

10 A.M. // AKSHAY KASHYAP

Convolutional Neural Networks for User Simulation in Spoken Dialogue Systems

KARP 008

CREATIVE WRITING IN ENGLISH: SHORT STORIES, FILM SCRIPTS, AND CREATIVE-NONFICTIONAL FORMS

MODERATOR: ANDREW BURKETT

9 A.M. // JAMAL ARAM

The Children Who Became Men Overnight: Memories of Love and War in Afghanistan

9:20 A.M. // JUSTIN ZORN

Writing a Modern Cinematic Road Epic

9:40 A.M. // KIMBERLY BOLDOC

A Monumental History: Stories of the Berkshires

LIPPMAN 017

ECONOMICS I

MODERATOR: ELLEN FOSTER

9 A.M. // OLIVIA CIPRIANI

Characterizing Past and Future Trends in the Workplace: An Analysis

9:20 A.M. // IAN ZANGRILLO

The Effects of Oil Price Shocks on the Stock Market Returns in Developed Economies

9:40 A.M. // BRIAN TEITELBAUM

The Impact of History on Trade Flows: A Gravity Model Approach on Trade of the States of Former Austria-Hungary

10 A.M. // EMILY JANNERY

The Pink Tax: Is it a Big Issue?

SESSION I

9 –10:20 A.M. ■ CONCURRENT ORAL PRESENTATIONS

WOLD 225

ENVIRONMENTAL POLICY: LAND USE OR CONSERVATION

MODERATOR: ANDREW MORRIS

9 A.M. // ANDY ZOU

Assessing the Objectives of Great Society Federalism in Outdoor Recreation Policy: 50 Years of the Land and Water Conservation Fund

9:20 A.M. // CHRISTY BROWN

Private Development in the Adirondack State Park and the Role of the Adirondack Park Agency

9:40 A.M. // SARA HALSEY

"Sight is a Faculty; Seeing, an Art": George Perkins Marsh, the Classical Environment and 19th-Century Conservation Policy

OLIN 306

GEOLOGY I: POLLUTION AND WATER CONTAMINATION

Moderator: Anouk Verheyden-Gillikin

9 A.M. // CAROLYN CONNORS

Impacts of Urbanization on Stream Water Biogeochemistry in Schenectady, N.Y.

9:20 A.M. // ALICE HAYDEN

Temporal and Spatial Variability of Perfluorooctanoic Acid (PFOA) and Other Related Perfluoroalkyl Acids in Hoosick Falls, NY

9:40 A.M. // JAKE ULRICH

An Investigation of the Effects of Chain Length and Ionic Head Group on Perfluoroalkyl Acid Binding to Human Serum Albumin

LIPPMAN 012

KLEMM FELLOWS I

MODERATOR: MARK DALLAS

9 A.M. // MEGHANA DAMARAJU

A Global Perspective: A Look into Sri Lankan Healthcare

9:20 A.M. // YUAN GAO

A Klemm Fellow Experience: Three Weeks in the Woods of Madagascar

9:40 A.M. // ZHIXIN KANG

Rethink the Role of Arts and Caring in Strengthening Communities: A Winter Break in Togo, Africa

10 A.M. // AYANAH DOWDY

Journey Through Another World: My Cultural Experience In Cape Coast, Ghana

BAILEY 207

MATHEMATICS I

MODERATOR: BRENDA JOHNSON

9 A.M. // JASON TURNER

Hurricane Links

9:20 A.M. // OLIVIA RICCI

Symmetry Groups in R^2

9:40 A.M. // LAUREN SAVRIN

The Math of Music: A Look at Musical Group Theory

10 A.M. // YUWEI LIU

Application of Group Theory to the PLR-group in Music Theory

SCIENCE AND ENGINEERING N205

MECHANICAL ENGINEERING-DESIGN

MODERATOR: JEREMY VANDEROVER

9 A.M. // ALEXANDER CHU

Through Yonder Window Breaks: The Rise of JULIET



SESSION I

9 –10:20 A.M. ■■■ CONCURRENT ORAL PRESENTATIONS

9:20 A.M. // JOHN COSTA

Liquid Fueled Rocket Engine Design

9:40 A.M. // JEREMY MANUS

Design of a Tick Collecting Robot

10 A.M. // MADELINE SAMUEL

Computational Fluid Dynamic Modeling and Analysis of Small Scale Horizontal Axis Wind Turbines

KARP 004

MODERN LANGUAGES

MODERATOR: ERIKA NELSON MUKHERJEE

9 A.M. // EMILY KERN

Stigma Against Career-Oriented Women Hinders Chinese Economic Growth

9:20 A.M. // ALLISON SCHACHTER

Los Beneficios Económicos de Ofrecer Servicios de Salud en Español

9:40 A.M. // GILLIAN HENRY

Die Märchenmütter—Fairy Tale Mothers

EMERSON AUDITORIUM (TAYLOR MUSIC CENTER)

NEUROSCIENCE, ELECTRICAL ENGINEERING AND MUSIC

MODERATOR: PALMA CATRAVAS

9 A.M. // CHRISTIE DIONISOS AND PAMELA RICE

Tricks of the Mind: The Binaural Observation and Exploration of the Scale Illusion

KARP 105

ORGANISMAL BIOLOGY I

MODERATOR: KATHLEEN LOGIUDICE

9 A.M. // ASHLEY ROSA

Restoring Native Pine Barren Vegetation at the Albany Pine Bush

9:20 A.M. // ANNA DORAN

An Analysis of Restoration Effects on Non-Native Species Invasion Throughout the Albany Pine Bush, New York

9:40 A.M. // NICOLE SHAUFFER

Investigating the Relationship Between Invasive Garlic Mustard, *Alliaria petiolata*, and Blacklegged Ticks, *Ixodes scapularis*

KARP 001

PHILOSOPHY

MODERATOR: ROBERT BAKER

9 A.M. // STEPHANIE DIGIORGIO

The Nature of Revenge

9:20 A.M. // BENJAMIN MEGATHLIN

The Ethics of Nanotechnology and the Precautionary Attitude

9:40 A.M. // HARLIE SILVER

Ethical Issues of Parental Vaccine Hesitancy and Resistance to the MMR Vaccine

LIPPMAN 016

POLITICAL SCIENCE I

Moderator: Bradley Hays

9 A.M. // COURTNEY SEGAL

The Aesthetic and the Generation of Partisan Imagery: An Analysis

9:20 A.M. // BENJAMIN FAY

American Patent Law: Liberal and Republican Theories of Governance

9:40 A.M. // ALYSSA BONESTEEL

The Evolution of Women in Intelligence

10 A.M. // BENJAMIN FAY

Technology and Democracy

SESSION I

9 –10:20 A.M. ■ CONCURRENT ORAL PRESENTATIONS

LIPPMAN 014

POLITICAL SCIENCE II

MODERATOR: ZOE OXLEY

9 A.M. // MICHELINE BAKOU

How Modesty Became Political

9:20 A.M. // EMMA STEIN

Television Media Coverage of Presidential Elections

9:40 A.M. // ALEXANDER SPYROPOULOS

An Evaluation of Reforms That Aim to Address Political Polarization

10 A.M. // JACQUELINE ABOULAFIA

What is Holding American Education Back? The Politics of Developing a Public School Curriculum about 9/11 and its Aftermath

LIPPMAN 101

SOCIOLOGY

MODERATOR: JANET GRIGSBY

9 A.M. // ALEX SAKELLAROPOULOS

Demographic and Traditional Routes to Play in the National Hockey League

9:20 A.M. // XIAOFEI XIE (CHERYL)

Fair Labor Practices: Are Workers Truly Protected?

9:40 A.M. // ALEXA STERITI

Life Satisfaction, GDP Per Capita and Social Impacts During an Economic Downturn

10 A.M. // MATTHEW WU

The Application of Telemedicine to College Health at a Four-Year University and Community College

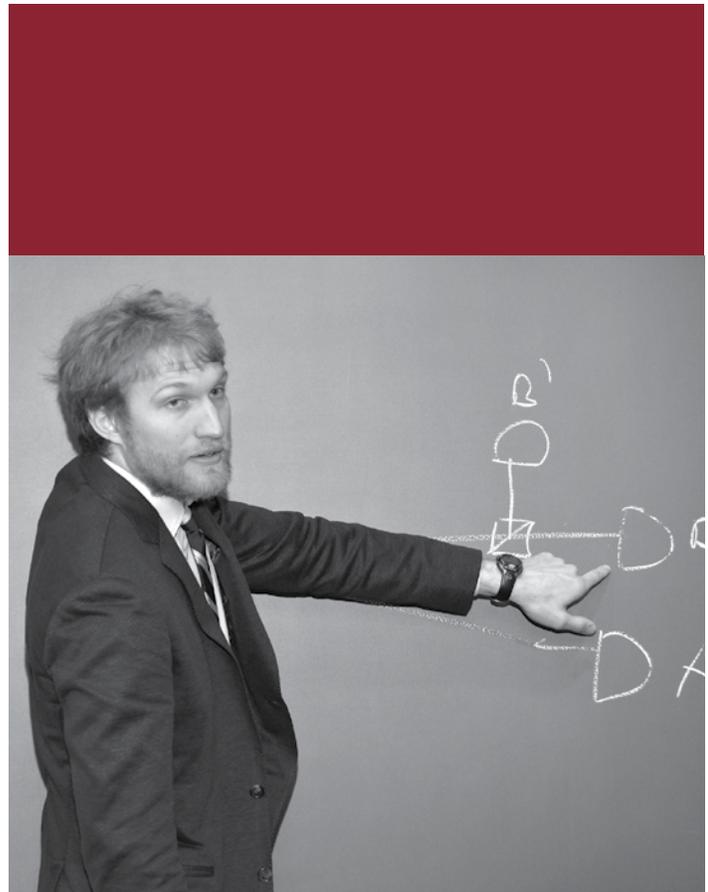
REAMER AUDITORIUM (REAMER CAMPUS CENTER)

THEATER DOCUMENTARY

MODERATOR: PATRICIA CULBERT

9 A.M. // CASSANDRA PADILLA

Comparisons and Contrasts Between Theatre and Film Directing



SESSION II

10:30 A.M. – 12:10 P.M. ■ CONCURRENT ORAL PRESENTATIONS

KARP 001

ANCIENT GREECE, ANCIENT ROME, AND MODERN ITALY

MODERATOR: STACIE RAUCCI

10:30 A.M. // THOMAS LAWTON

A Study of Demagoguery in Athens and America

10:50 A.M. // KATHRYN EVANS

Economic Rights of Women in Classical Athens

11:10 A.M. // MITCHELL TOOLAN

Painting the Enemy: How Classical Greek Historians
Portrayed Military Adversaries

11:30 A.M. // GIANLUCA AVANZATO

A Nation Divided: The Failed Unification of Italy and the
Emergence of Italian Orientalism

KARP 002

ANTHROPOLOGY II

MODERATOR: ROBERT SAMET

10:30 A.M. // RACHEL MCDERMOTT

FoMO and The Image of The Self: From College Campuses
to Madison Avenue

10:50 A.M. // KATHRYN MARTIN

Youth L.I.F.E. Support Network: An Ethnographic Study of
Violence and Crime in the City of Schenectady through
the Youth L.I.F.E. Violence Interrupter Organization

11:10 A.M. // ARTHUR SCHUTZBERG

Personalizing Education: How to Examine the Race,
Class, and Socio-Economic Disparities in Public Education

WOLD 128

BIOENGINEERING, ELECTRICAL & COMPUTER ENGINEERING

MODERATOR: TAKASHI BUMA

10:30 A.M. // SANG WON CHOI

High Frequency PVDF Transducer for Photoacoustic
Microscopy System

10:50 A.M. // TAYLOR ULLRICH

Parking Lot Occupancy Monitor

11:10 A.M. // YAZAN BARHOUSH

Ultrasound Imaging System for Educational Purposes

11:30 A.M. // DAVID FISHMAN

Electronic Dive Mask: A Heads up Display for Deep Diving

11:50 A.M. // SANG WON CHOI

Injection-Seeded Raman Fiber Amplifier for Photoacoustic
Microscopy of Lipids

KARP 005

BIOLOGY I

MODERATOR: ROBERT OLBERG

10:30 A.M. // SAMUEL EDDY

Smooth Muscle Differentiation During Spiral Valve
Formation in the Skate, *L. Erinacea*

10:50 A.M. // OLIVIA AITKEN AND LAILA KING

Modifying Biology to Improve Eco-Friendly Biomaterials
by Genetic Reprogramming of an Industrial Fungus

11:10 A.M. // NATALIA CIESIELSKA

Eyes in the Back of Their Heads: Investigating Backward-
Looking Visual Neurons in the Aeshna Dragonfly

11:30 A.M. // ALEXIS WOJTOWICZ

Cloning and Expression of Cdx2 during Patterning of the
Spiral Valve Intestine

11:50 A.M. // ANDREW HAMLIN

Neuronal Response to Object Approach in Dragonflies:
The Effect of Stereopsis

LIPPMAN 016

CHEMISTRY

MODERATOR: MORGOT PAULICK

10:30 A.M. // JONI-RAE PARTRIDGE

Harnessing Click Reaction to Synthesize Mechanically
Interlocked Cucurbit[n]uril Molecules

SESSION II

10:30 A.M. – 12:10 P.M. ■■■ CONCURRENT ORAL PRESENTATIONS

10:50 A.M. // JOANNA OH

Aggregation in a Water Soluble Luminescent Cyclometalated Platinum (II) Complex: Condition Sensitive Luminescence Enhancement

11:10 A.M. // BRITTANY GAY

Comparative Analysis of Drosophila Athabasca Cuticular Hydrocarbons: Identification, Quantification, and Synthesis

11:30 A.M. // JACK BRAGG

Synthesis and Evaluation of Cell-Permeable Analogs of Trehalose

KARP 008

CRITICAL WRITING IN ENGLISH (I): REPRESENTATIONS OF NATURE FROM AMERICAN TRANSCENDENTALISM TO CONTEMPORARY DYSTOPIAN LITERATURE

MODERATOR: BERNARD KUHN

10:30 A.M. // ROBERT PINKHAM

Conceptualizing Nature: New England Nature Writing

10:50 A.M. // ELIZABETH HURLEY

Combating Human Extinction: Biblical Archetypes and Environmental Apocalypse in Contemporary Dystopian Fiction

KARP 008

CRITICAL WRITING IN ENGLISH (II): FICTION AND SOCIAL JUSTICE—GENDER, SEXUALITY, AND MARGINALIZED HUMAN IDENTITIES

MODERATOR: JENNIFER MITCHELL

11:10 A.M. // OLIVIA ESTES

The Emergence of Homosexual Stereotypes in the Victorian Gothic Novel

11:30 A.M. // MEGHAN KEATOR

Living within the Margins: The Constitutional Culture of Irish Life, Law, and Literature

11:50 A.M. // CHRISTINA BELFORTI

Reimagining and Unimagining Genre in Helen Oyeyemi's Fiction

LIPPMAN 017

ECONOMICS II

MODERATOR: TOMAS DVORAK

10:30 A.M. // JOHN COSTA, AKSHAY KASHYAP, AND CHRISTOPHER PORAT

Quantitative Finance: Design of an Algorithm to Trade the Stock Market

10:50 A.M. // LAURA MUELLER

Rating College Debt: A Case Study of Union College

11:10 A.M. // KATHRYN DAVIS

Business Plan: Ugly Duckling Pressers

11:30 A.M. // CONNOR JANSON

Tribe: Revolutionizing the Way Millennials Go Out

WOLD 225

ENVIRONMENTAL POLICY: AGRICULTURE

MODERATOR: DOUGLAS KLEIN

10:30 A.M. // KAYLEE WILLIAMS

Community Gardening and Urban Agriculture: An Analysis of Food Growing Organizations in the Capital Region, Portland and Milwaukee

10:50 A.M. // MADELINE LEWIS

The Negative Environmental Consequences of the Animal Agriculture Industry and the U.S. Policies in Place to Protect It



SESSION II

10:30 A.M. – 12:10 P.M. ■ CONCURRENT ORAL PRESENTATIONS

11:10 A.M. // NATALIE SULLIVAN

Is Genetic Modification the Answer?

11:30 A.M. // CALVIN WILES

Industrial Hemp in the United States: History, Production, Market Potential Politics, and Environmental Implications

KARP 004

FRENCH AND FRANCOPHONE STUDIES: LANGUAGE, GENDER, AND MACHINES: DIALOGUES D' ESPACES

MODERATOR: CHEIKH NDIAYE

10:30 A.M. // MARC MAZZA

The Chronicles of You

10:50 A.M. // ANDY GONZALEZ

Video Games: Connecting the Dots

11:10 A.M. // ELIZABETH ALMONTE

Women's Role in Vichy France During the German Occupation of World War II

11:30 A.M. // LAUREN SAVRIN

Teaching a Foreign Language: the Need and Impact on Society in France and the United States

OLIN 306

GEOLOGY II: WATER, SOIL, AND SEDIMENT STUDIES IN LOW LATITUDE ENVIRONMENTS

MODERATOR: DAVID GILLIKIN

10:30 A.M. // MICHAEL KAYE

Biogeochemical and Stable Isotope Analysis of High Andean Streams and Rivers of the Lake Junin Watershed, Peru

10:50 A.M. // JAMES MOLLOY

A Megascala Survey of Heavy Metal Contamination from Mining Dust from the Cerro de Pasco Mining District (Peru)

11:10 A.M. // LIAM GLENNON

Distinguishing Detrital and Authigenic Calcite From Transect Core Catcher Samples in Lake Junin, Peru

11:30 A.M. // CLAIRE PULEIO

Elemental Uptake in Botswanan Freshwater Bivalve Shells (*Mutela zambesiensis* and *Coelatura kunenensis*) Along a Strong Evaporative Gradient: Paleoclimate Reconstruction Implications

LIPPMAN 012

HISTORY

MODERATOR: STEVE SARGENT

10:30 A.M. // MEGHAN KEEGAN

"We Poor Devils": The Interactions, Shared Experiences and Differing Fates of the Cheyenne, Sioux, Buffalo Soldiers and the U.S. Army in a Post Civil War America, 1865-1890

10:50 A.M. // WILLIAM TOMALONIS

Conflict in Syria: Unraveling the Conflict with a Historical Lens

11:10 A.M. // RUILI TANG

Multi-Agent Simulation of the Battle of Ankara, 1402

11:30 A.M. // ALEXANDRA STEED

No One Expects the Spanish Inquisition: Witchcraft Trials in Basque Spain and Southwestern Germany

11:50 A.M. // BRIAN TEITELBAUM

Symbols of a Bourgeois Empire: The Intersection of Class and Government during Paris's Transformation into a Middle-Class Capital

BAILEY 100

INTERDISCIPLINARY THESES

MODERATOR: AARON CASS

10:30 A.M. // AMANDA PRICE

The Effect of Emotion Regulation on Turnout Rates Among Youth Voters

SESSION II

10:30 A.M. – 12:10 P.M. ■■■ CONCURRENT ORAL PRESENTATIONS

10:50 A.M. // NIA FRANCIS

Where is the Environmental Justice in the Lower Ninth?

11:10 A.M. // MADISON SHAPIRO

Product Bundling in Fast Food Advertisements and the Relationship With Consumers' Willingness to Pay

11:30 A.M. // ARIELLE SINGER

South By Southwest 2017

11:50 A.M. // ARIELLE SINGER

Brilliant Blues and Smooth Circles: The Makings of a Brand

BAILEY 207

MATHEMATICS II

MODERATOR: JUE WANG

10:30 A.M. // KATHERINE MOELLER

Projective Geometry Yields a New Perspective

10:50 A.M. // MELISSA EPSTEIN

Primes That Factor

11:10 A.M. // GRACE KERNOHAN

Exploring the Three Dimensions of Sustainability in China

11:30 A.M. // ARI BENNETT

How Americans' Social Attitudes Change As They Age

11:50 A.M. // RAQUEL PARAMO

Exploring Sustainability in China Through Economic Development, Environmental Degradation, and Social Well-Being

SCIENCE AND ENGINEERING N205

NANOTECHNOLOGY

MODERATOR: MICHAEL HAGERMAN

10:30 A.M. // KIMBERLY BOLDOC

Exploring Low Cost and Water Soluble Routes to Quantum Dot Solar Cells

10:50 A.M. // DANIEL JACKSON

Tailoring of CdSe Nanoparticles for Solar Applications

11:10 A.M. // MASON KING

Ceria Nanoparticles for Sustainable Heavy Metal Water Filtration

11:30 A.M. // JEFFREY WILK

Deposition and Characterization of Hybrid Nanocomposite Films for Orthopaedic Applications

11:50 A.M. // ZHIXIN KANG

Synthesis of Electrically Conductive Polylactic Acid Composites for 3D Printing

BAILEY 312

NEUROPSYCHOLOGY AND COGNITION

MODERATOR: CAY ANDERSON-HANLEY

10:30 A.M. // MADDISON STEMPLE-PIATT

A Comparison of Personality Factors and Cognitive Abilities in Offenders and College Students: Offender and Non-Offender Differences in Empathy, Aggression, Impulsivity and Executive Functioning

10:50 A.M. // EMILY WEST

Neuropsychological Test Performance in Pediatric TBI And ADHD: Difference in Reliable Digit Span

11:10 A.M. // COURTNEY CROSS

Theory of Mind in Children and Adolescents on the Autism Spectrum: Comparison with Normative Individuals

11:30 A.M. // JESSICA STARK

Biomarkers and Neuropsychological Change: A Pilot Study of Three Months of the interactive Physical and Cognitive Exercise System (iPACES™) for Older Adults

11:50 A.M. // ALEXA SCHILLACI

Neuropsychological Effects of the Interactive Physical and Cognitive Exercise System (iPACES™) for Older Adults: Executive Function and Mood



SESSION II

10:30 A.M. – 12:10 P.M. ■ CONCURRENT ORAL PRESENTATIONS

LIPPMAN 014

POLITICAL SCIENCE AND LATIN AMERICAN STUDIES

MODERATOR: GUILLERMINA SERI

10:30 A.M. // SCOTT ERNENWEIN

The Rise of Private Military Companies and the Decline of State Power

10:50 A.M. // KARL-RAY JEUNE

January 12, 2010 (A Look Into Haitian Politics)

11:10 A.M. // OLIVIA BRITTON

Les Misérable: The Syrian Refugee Crisis and the French's Response

11:30 A.M. // ANTHONY WRIGHT

The Impact of Guerilla Warfare on Democratic Stability in Latin America

11:50 A.M. // AUBREY GRIFFIN

The Coup d'état of Non-Governmental Organizations in the 21st Century: A Case Study of Development in Siem Reap, Cambodia

BAILEY 201

PSYCHOLOGY

MODERATOR: CATHERINE WALKER

10:30 A.M. // KINGSHUK MAZUMDAR

Food Porn and A Snack: Investigating the Effect of Mindset on a Taste Test

10:50 A.M. // ARIELLA HONIG

The Relationship Between Parenting Styles, Children's Temperaments, and Sibling Relationships: A Look Within Families Who Have A Child With Down Syndrome

11:10 A.M. // JULIA GREENE

Human-Robot Interaction and the Ability of Robots to Engage in Humanlike Relationships

11:30 A.M. // JULIA BROOKS

What Can My Body Do For Me? Seeking to Improve Body-Satisfaction with a Guided Functionality Mirror Exposure

11:50 A.M. // SARAH IRVINE

The Effects of Anxiety and Depression on Self-Defining Memory and Self-Defining Future Projections

LIPPMAN 101

SOCIOLOGY AND AFRICANA STUDIES

MODERATOR: DEIDRE HILL BUTLER

10:30 A.M. // JAMES BASUK

"Will Anyone Help Me?" A Qualitative Study of Sexual Assault Reporting on a Liberal Arts College Campus

10:50 A.M. // LAI WONG

The Unheard Heroes of the Homelessness Issue: Exploring the Perspectives of Social Service Workers

11:10 A.M. // MARLEY WEIG-PICKERING

Uprooting Food Injustice: A Qualitative Analysis of Activist Efforts Combating Food Deserts and Inequality

11:30 A.M. // ANDREW GUYATTE

Afrofuturism: A Journey into Black Space

KARP 105

SPECIAL TOPICS—PERSPECTIVES ON MEDICINE, TECHNOLOGY, AND WOMEN

MODERATOR: DAVID COTTER

10:30 A.M. // BRIANNA GUTIERREZ

Breaking the Glass Slipper: Analyzing Female Figures' Roles in Disney Animated Cinema from 1950-2013

10:50 A.M. // ANTONIA BATHA

Make it on Her Own? The Portrayal of Single Women on Television from the 1970s to the 2010s

SESSION II

10:30 A.M. – 12:10 P.M. ■ CONCURRENT ORAL PRESENTATIONS

11:10 A.M. // CHRISTINA DYKAS

Women's Health and Alternative Medicine

11:30 A.M. // PATRICK GARDNER

The Factors Affecting Perceptions and Use of Technology

11:50 A.M. // ANASTASIA NETRUNENKO

Narrative Medicine and Patient Satisfaction: A Response to the Disconnect in Communication Between the Medical Community and the General Public

FEIGENBAUM CENTER FOR VISUAL ARTS 204

VISUAL ARTS & ART HISTORY

MODERATOR: SHERI LULLO

10:30 A.M. // AMY PROVOST

Her Story: A Study of Feminism in Folklore

10:50 A.M. // VALERIE PURCELL

The Origin of Man through Prints

11:10 A.M. // YI TING PAUNG

Surrealism: The Art of the Subconscious

11:30 A.M. // JACQUELINE SELTZER

Her Body: Redefining and Reclaiming the Female Form Through Feminist Art

11:50 A.M. // ALLISON SMITH

The Dissemination of Sculpture: Auguste Rodin

OLIN 115

WHAT'S STRESSING YOU OUT? THE EFFECTS OF CORTISOL AND STRESS

MODERATORS: BRIAN COHEN

10:30 A.M. // BRIANNA GODLEWSKI

The Linkage Between 11 β -hydroxysteroid Dehydrogenase Type 1 Enzyme Hyperactivity Polymorphisms & Metabolic Syndrome

10:50 A.M. // JUSTIN SALM

Investigating the Effects of Polymorphisms of the Glucocorticoid Receptor on Obesity and Depression

11:10 A.M. // ANA CARRANCO

Impact of Exercise on Stress Responses in an Undergraduate Student Population

11:30 A.M. // SHIRAZ MUMTAZ

Does Exercise Help Improve Recognition Memory After Stressor Exposure?

11:50 A.M. // JUSTINE MONTHONY

Fitness and Exercise as Linked to Overall Stress and Physiological Stress Responses



SESSION III

12:20 P.M. – 1:50 P.M. ■ POSTER PRESENTATIONS
WOLD CENTER ATRIUM

MODERATORS: ELLEN GASPAROVIC AND LUKE DOSIEK

LISA HLADIK

Audio-Forensic Analysis of Audio Recordings Through Digital Signal Processing

XAVIER QUINN, ALEX PRADHAN, SUNAN SUN, JAMES HOANG

Power Gauntlet

JOSEPH NOONAN

The Analysis and Creation of Composite Body Panels for the SAE Baja Car

JENNIFER NUTTER

Analysis of the Deadlift Exercise in Relation to Swimming Performance

AIYANA POULIN

Star Formation in Abell 779

ANDRES JACOBO

Social Robots: Mimicking Human Behavior During Conversation

KARL-RAY JEUNE

Obenzinger Project: Lack of Minority Physicians

BRIAN CATTAFE

Improving Experimental Techniques for Electron-Positron Annihilation and Compton Scattering Labs

LAUREN O'CONNOR

Photolysis of Organic Ultraviolet Filter Chemicals

BENJAMIN SCHWARTZ

Dynamic Testing of Brushless D.C. Motors for SAE Aero

ANGELINA STEWART, ALICIA CLARKE

Relationship Between Meditation, Food Choices, and Stress

REBEKA KELMAR

HI Deficiency in Group Galaxies

RORY BENNETT

Two New History List Interfaces for Performing Selective Undo

MARIA VAN NOSTRAND, SARAH HICKERNELL, WILL FISHER, HANNAH BARNES

Geochronology of Hornblende Granite in the Tunk Lake Pluton of Downeast Maine

ELIZABETH ALTMAN

Structure-Function Relationships Within the Human Body

JOHN SHULER

Drosophila athabasca Cuticular Hydrocarbon Synthesis

ELIZABETH DONLON, ADAM FORTI

Silica Aerogels Impregnated with Copper Nanoparticles: An Investigation of Three-Way Catalytic Ability

JACK BEATY

Modeling Medial and Lateral Tissue Damage in the Hind Legs of Mice

LISA GU

Synthesis of Quantum Dot Molecular Beacon Probes

MOLLIE POPE, ANDRES GALLEGO, TSHERING LAMA SHERPA, ABADIE LUDLAM, JOSHUA DUNN

Age of the Rapakivi Zone of the Tunk Lake Pluton in Downeast Maine

BENJAMIN NADARESKI

Multielemental Analysis of Radioactive Testing Sites via Proton Induced X-ray Emission Spectroscopy

GREGORY HAYNER

Quantification of Trehalose Using High-Performance Liquid Chromatography-Refractive Index Detection

JOHN JONKER

Manganese Oxide Nanomaterials for Energy Applications

NOLAN LESCALLEET, ALEXANDER DOLCIMASCOLO, JULIE SOPHIS, ALISON HORST

Ages of Zircon from the Biotite-Quartz Monzonite Zone in the Concentrically Zoned Tunk Lake Pluton

KYLE MASON

Simulating the Energy Consumption of Karp Hall Using EnergyPlus

SESSION III

12:20 P.M. – 1:50 P.M. ■ POSTER PRESENTATIONS
WOLD CENTER ATRIUM

VINCENT OLIVETO

Design and Construction of a Thermoelectric HVAC Dehumidification System

ANNA KO

Can Humans Use a Robot's Eye Gaze to Distinguish Between Similar Objects?

SAMANTHA GAVIN

Cerium Oxide Hollow Nanospheres for Adsorption of As(V) and Cr(VI)

PAIGE KOTOWITZ, ALEXANDRA NOVAK

Measuring Vapor Pressures with the ElectroDynamic Balance

CAROLINE TRAYNOR

Investigation of Iron Oxide Nanoparticles Embedded in Laponite Hydrogels for Water Purification

CAMERON SMITH

A Visual Interface for Product Exploration on Online Shopping Websites

NICHOLAS VAN NOSTRAND

Emotion Recognition App

THOMAS GAGLIARDI

Temperature Distribution in Bryophyte Canopies and its Relationship to Water Flux

NAAILA PHOENIX

Liposome Encapsulation for Drug Delivery

ALEXANDER DOLCIMASCOLO, ABADIE LUDLAM,

JOSHUA DUNN

Union College Water Initiative (UCWI)—Testing for Heavy Metals in drinking water

QUINTIN LENOCI

BitScope Micro: A Reliable and Cost-Effective Oscilloscope

BIANCA MIELKE

Ballston Lake—Underwater Data Collector

SAMUEL KUPIEC, BLAIR HAGEN, MADELEINE MILLER

Micro Aero Competition Team

JAIME DEFELICE

Changes in Cartilage and Subchondral Bone in Mouse Femoral Condyles After Bone-Loading During Exercise

JAMES HAWKINS

The Effect of Recycled Materials and Adhesion Angle on the Tensile Strength of Additive Manufacturing

VENUS YU

Attracting Human Attention Using Robotic Facial Expressions and Gestures

ALEXANDRA NOVAK, PAIGE KOTOWITZ

UAir: The Union College Air Quality Network

MOLLIE POPE

The Investigation of the Provenance of Detrital Zircons from Dominica in Lesser Antilles

YUAN GAO

Develop Approaching Strategies for Social Robot to Ask for Assistance from Human

ROBERT RIGHI

Dispersing Carbon Nanotubes in Laponite Films and Hydrogels

JACOB PESSIN

Graphene Aerogels for Clean Energy

ANDREW FONTAINE

Design of a New ITES System

MADELEINE MILLER

Diffusion of Au/Pd in Iron Sulfide

ZONGLIANG JI

Exploring Fast Matrix Multiplication Algorithms



SESSION III

12:20 P.M. – 1:50 P.M. ■ POSTER PRESENTATIONS
WOLD CENTER ATRIUM

HAYLEY BENNETT

Dissolved Inorganic Carbon Isotopes in Cretaceous-Paleogene Freshwater Streams

BRENDAN CHEEVERS, KATHLEEN MATTHEWS, NATE BILLINGS, BENJAMIN SCHWARTZ, CATHERINE KANAMA

SAE Aero Advanced Class Team

KEANU RODRIGUEZ, JOHN COSTA

Research & Design of a Liquid-Gas Propellant Rocket Engine

ALLISON DEVINS

The Player's and Goalie's Perspectives on Scoring Angles in Ice Hockey

EMMANUELA OPPONG

Analyzing the 3D Structure of the Spiral Intestine of a Cartilaginous Fish

PRANAV SHRESTHA

Distribution-Level Frequency Estimation and Modal Analysis Using Inexpensive and Open-Source Phasor Measurement Unit

STEPHANIE TATE

Visualization of the Actin Microfilaments and Microtubules in Response to ATP-Depletion

YIZHI LIN

Limbic Grey Matter Alterations in Patients with Trigeminal Neuralgia

PAIGE ISSER

Micro-CT Preparation Techniques

KEVAN MCDONALD, SONJA HANSSON

Evaluation of Cell-Permeable Analogs of Trehalose for Delivery of Free Trehalose into Mammalian Cells

TIANYU ZHAO

High-Tech Trade Policy During an Era of Global Industrial Restructuring



SESSION III

12:20 P.M. – 1:50 P.M. ■ POSTER PRESENTATIONS
LALLY READING ROOM, SCHAFER LIBRARY

MODERATORS: HANS MUELLER AND KRISTIN BIDOSHI

KIMBERLY WELLINGTON

How Much Education is Too Much?

PETER RICHARDSON

The Evolution of Credit Markets in Archaic and Classical Athens

MATTHEW RAMETTA

Controversies in Industrial Policy: The Creation of an Explicit U.S. Industrial Policy

IAN BENNETT

Net Neutrality: Policy and Stock Market Implications

OLIVIA BRITTON

Echoes of Despair: The Grim Reality of Syrian Refugees

LAUREN MELTZ

The Relationship Between Children's Social Environment and Susceptibility to Asthma

NATALYA BRILL

Conceptualizing Prefixed Russian Verbs of Motion in Virtual Reality

REBECCA LIPPITT

China and the Character Debate

ANDREW CASSARINO

The Duke of Richmond: The Military Career of Edward Hastings Ripley, 1862-1865

CASEY MORIARTY

Commemorating Tragedy

DIMPLE PERMAUL

Caribbean Immigration in France and the United States

TAYLOR GORMAN

Matris Imperium: A Dramatic Interpretation of the Life of the Empress Agrippina, Mother of the Empire

JAHICOL BARALT

Classical Reception in Ryse: Son of Rome



SESSION III

12:20 P.M. – 1:50 P.M. ■ ENGINEERING PROJECT DISPLAYS
WOLD ATRIUM, WOLD 031 (PHASOR LAB) AND WOLD 118

DESIGN OF A CONTROLLABLE BOUNCING MECHANISM

GALEN MOYNIHAN

A vertically controllable bouncing mechanism has been designed and will be demonstrated.

PHASOR LAB

RICHARD BOAKYE, KABIR CHABRA, PATRICK COWDEN, CHRISTIE DIONISIOS, JACKSON DOUGHTY, JESSICA FEINBERG, DAVID FISHMAN, GILLIAN HENRY, ZACKARY HERSH, ALEXANDER HEYWOOD, A. J. HUBBARD, CATHERINE KANAMA, JOHN KODERA, MILTON MICHEL, EMILY NEWMAN, NAAILA PHOENIX, PAMELA RICE, NATE SEARS, VARUN SHAH, SERAJ SIDIBE, MICHELLE STAPLES, NICHOLAS VAN NOSTRAND, NICHOLAS WRIGHT, SCOTT ZINCK

Students will discuss projects involving electrical engineering and music and a student-organized music therapy initiative: "Music with Arc." A program of musical performances will include a special appearance by the Heavenly Voices Gospel Choir, led by musical director Lynny Walters, adjunct professor of music.

SOLAR POWERED LAWN TRIMMER

COLIN MCCAFFREY, DANIEL BEINSTEIN

The lawn mower is able to cut a quarter-acre of land in a week controlled by using a RC radio, receiver, and relay. This lawn mower uses a Stanley Black & Decker weed wacker as the cutting device and the device uses two driving wheels. The cutting device and the driving wheels are powered by a combination of a 12-volt lead-acid battery and a 12-volt solar panel.

UNION COLLEGE ROBOTICS CREW MICROMOUSE DEMOS

TEAM A:

EDWARD GEBARA, DAVID KOVAL, PRANAV SHRESTHA

TEAM B:

PYAE SONE AUNG, JERRY JI, ANTHONY YANG, LAM NGO

Teams who designed, constructed and programmed autonomous robots for a maze-solving competitions will explain and demonstrate their robots. This year's two teams entered the competition hosted at Brown University.

SESSION III

12:20 P.M. – 1:50 P.M. ■ ARCHITECTURAL RENDERING AND MODELS
REFERENCE ROOM, SCHAFFER LIBRARY

TRANSITIONAL SPACE AS AN AESTHETIC EXPERIENCE: THE SCHENECTADY AMTRAK STATION REDESIGNED FOR A REVITALIZED FUTURE

SAMANTHA MILLER

This display represents an investigation of the architectural history of Schenectady, and an exploration in designing for revitalization in such a heavily layered architectural context.

12:20 P.M. – 1:50 P.M. ■ MINERVA FELLOWS POSTER AND VIDEO PRESENTATION
REFERENCE ROOM, SCHAFFER LIBRARY

SPONSOR: TOM MCEVOY

Eight Minerva Fellows will be on-hand to discuss their volunteering experiences abroad during this poster and video presentation.

ANDREW FELLOWS

Aspire Food Group, Ghana

Insects as a Source of Protein for the Hungry

DAVID ROY

Witkoppen Health Center, Johannesburg

Antiretrovirals to Combat HIV Transmission from Mothers to Babies

BRIANNA CARUCCIO AND MATTHEW WOLFORD

Engeye Health Clinic, Uganda

An Expanding Community-Based Rural Ugandan Health Clinic

ALLISON BOREK AND EMILY MYERS

The Global Child, Cambodia

Incentivizing Cambodian Street Children to Learn

JONATHAN MARTIN AND ZIBUSISO DHLAMINI

Yanapuma, Ecuador

Estero De Platano, Ecuador, Community Development in a Rural Fishing Village on the Pacific



SESSION IV

2 – 3:20 P.M. ■■■ CONCURRENT ORAL PRESENTATIONS

LIPPMAN 014

AMERICAN STUDIES

MODERATOR: ZOE OXLEY

2 P.M. // ELIZABETH DALTON

Race to the Bottom: The United States' Early Childhood Education Issue

2:20 P.M. // SARAH RIDER

The 60s: Re-Defining the American Identity

2:40 P.M. // SARAH MEDD

The Truth Behind the American Dream: An Analysis of how the Great Recession Affected Minority Homeownership Rates and Presidential Rhetoric

LIPPMAN 101

APPLIED MICROECONOMICS

MODERATOR: YOUNGHWAN SONG

2 P.M. // JING JIN

Do Elderly Workers Crowd Out Younger Workers in the United States?

2:20 P.M. // JOHN PERROTTI

The Connection Between Gasoline Prices and Physical Activity: Potential Ways to Combat the Rise in Obesity

2:40 P.M. // GREGORY GEISEL

Weight and Wages: The Effect of Changing BMI Over Time

KARP 005

BIOCHEMISTRY II

MODERATOR: KRISTIN FOX

2 P.M. // MOLLY MCDONALD

ScMC4 is a Metacaspase Active in Cleaving Peptides after Arg Residues

2:20 P.M. // JENNA PRADHUMAN

Use of CRISPR to Develop a Follicle Stimulating Hormone Receptor Knockout in Human Granulosa Cells to Study Lipid Raft Residency

2:40 P.M. // STEPHANIE SCHARBACH

Cloning, Expression and Characterization of ScMC2

NOTT MEMORIAL

DANCE DOCUMENTARY

MODERATOR: MIRYAM MOUTILLET

2:20 P.M. // MADDISON STEMPE-PIATT

Life in the Mirror: A Short Documentary on Body Image in Dance

LIPPMAN 017

ECONOMICS IV

MODERATOR: LEWIS DAVIS

2 P.M. // PATRICIA MARAGOS

Piracy in the Entertainment Industry: How Does the Strength of Intellectual Property Rights Impact Royalty Payments to the United States?

2:20 P.M. // BENJAMIN FAY

Do Preferential Trade Agreements Affect US Exports?

2:40 P.M. // MICHAEL FROMAN

Urban Redevelopment: New Bedford, Massachusetts

3 P.M. // CHARLOTTE AVERY

Economics Thesis

WOLD 128

ENVIRONMENTAL SCIENCE, POLICY & ENGINEERING

MODERATOR: DOUGLAS KLEIN

2 P.M. // DAVID OLIO

Analyzing the German Phase-Out of Nuclear Energy

2:20 P.M. // MICHAEL SCIASCIA

New York State's Zero Emission Credits: Exploring the Drivers and Significance of Nuclear Energy Subsidization in the Empire State

SESSION IV

2 – 3:20 P.M. ■ CONCURRENT ORAL PRESENTATIONS

2:40 P.M. // KATHERINE QUINLAN

Do Environmentally Friendly Companies Outperform Environmentally Un-Friendly Companies in Financial Markets? An Analysis of Financial Performance and Corporate Social Responsibility

3 P.M. // ERIK VAN ZIJL

The Plight of African Elephants: A Study of the Economic Impact of Elephant Poaching and Ivory Trafficking on Tourism of Thirteen African Countries.

KARP 004

FRENCH AND FRANCOPHONE STUDIES: LOUISIANA, QUEBEC, HAÏTI: TROIS MONDES FRANCOPHONES

MODERATOR: CHEIKH NDIAYE

2 P.M. // VINCENT DEFELICE

French Colonialism in Louisiana through Historical Fiction

2:20 P.M. // ASTRID VARGAS

Haiti's Story and its Health

2:40 P.M. // BRIADNA ALMAZO

The Motives for Healthcare Privatization in Québec

OLIN 306

GEOLOGY III: GEOCHEMISTRY OF ROCKS, MINERALS, AND WATER

MODERATOR: HOLLI FREY

2 P.M. // KATHERINE SWAGER

Volcanic Apatite Chemistry and Zoning in the Roseau Valley, Dominica, Lesser Antilles

2:20 P.M. // DANIEL MEANDRO

Establishing an Isotopic Geochemical Baseline for Volcanic Monitoring: Dominica, Lesser Antills

2:40 P.M. // CARLI ARAGOSA

Monitoring Geochemistry in the Valley of Desolation/Boiling Lake, an Active Hydrothermal System in Dominica

3 P.M. // BENJAMIN LUCAS

Prescott Intrusive Complex, Central Massachusetts, Geochemistry and Structural Reinterpretation

LIPPMAN 012

KLEMM FELLOWS II

MODERATOR: MARK DALLAS

2 P.M. // LAKHENA LEANG

The Developed Mindset in a Developing Country: Healthcare in Rural Cambodia

2:20 P.M. // CHRISTINA DYKAS

Prenatal, Birthing, and Postpartum Care in Arusha, Tanzania

2:40 P.M. // EMMA STEIN

Klemm Fellowship in Cape Town, South Africa

3 P.M. // ERIC LOVETT

A Global Analysis: Midwifery and Pediatric Care in Arusha, Tanzania

BAILEY 207

MATHEMATICS III

MODERATOR: ALAN TAYLOR

2 P.M. // CONNOR HURLEY

Choice of Choice: Paradoxical Results in Zermelo-Fraenkel Set Theory

2:20 P.M. // RUOXUAN JIA

The Axiom of Choice in Topology

2:40 P.M. // REBEKA KELMAR

An Investigation of the Four Vertex Theorem and its Converse

3 P.M. // FRANCIS ROCCO

Elliptic Curve Cryptology



SESSION IV

2 – 3:20 P.M. ■ CONCURRENT ORAL PRESENTATIONS

SCIENCE AND ENGINEERING N205

MECHANICAL ENGINEERING— MATERIALS CHARACTERIZATION

MODERATOR: RONALD BUCINELL

2 P.M. // ROBERT KEEVER

Characterization of Mechanical Properties of Skeletal Mycelium through Tensile Testing

2:20 P.M. // RAQUEL PARAMO

Optimizing Speckle Patterns for Digital Image Correlation

2:40 P.M. // JUSTIN ITZKOWITZ

Environmentally Friendly 3D Printing Materials

3 P.M. // EVAN ARMANETTI

The Optimization of a Natural Composite I-beam for 2017 SAMPE Miniature Bridge Competition

BAILEY 201

NEUROSCIENCE

MODERATOR: DAVE HAYES

2 P.M. // RACHEL FIELDS

Steady State Visual Evoked Potentials for Binary Communication Responses in EEG-based Brain Computer Interface

2:20 P.M. // BAILEY BALOUCH

Characterization of Fibroblast Cells Derived from a Patient with Infantile Neuronal Ceroid Lipofuscinosis

2:40 P.M. // NEEL PATEL

A Study in Learning

3 P.M. // ABIGAIL TESTO

An Examination of the Relationship Between Grey Matter and Depression and Anxiety Scores

BAILEY 312

NEUROSCIENCE: THE INFLUENCE OF EXERCISE

MODERATOR: LINDSAY MORTON

2 P.M. // NOEMIE BECHU

The Road to Recovery: Predicting Improvement in Physical Therapy Programs

2:20 P.M. // MICHAELA HALLER

Interactive Physical and Cognitive Exercise System (iPACES™): The Cognitive Effects of Exergaming on Individuals on the Autism Spectrum

2:40 P.M. // ALEXA TSAO

The Study of Flow in Exergaming with Autism Spectrum Individuals through the Interactive Physical and Cognitive Exercise Study (iPACES)

KARP 105

ORGANISMAL BIOLOGY II

MODERATOR: JEFFREY CORBIN

2 P.M. // KATHERINE MAXIMOV AND CATE WADMAN

Color Vision and Signal Color Evolution in Anolis Lizards

2:20 P.M. // NAINA THOTA

Investigating Possible Mechanisms of the Invasive Shrub, *Lonicera tatarica*, to Enhance Black-Legged Tick Survival

2:40 P.M. // RACHEL FRIED

Predictors of Exotic Plant Species in United States National Parks

SESSION IV

2 – 3:20 P.M. ■ CONCURRENT ORAL PRESENTATIONS

SCIENCE AND ENGINEERING N304

PHYSICS

MODERATOR: MIKE VINEYARD

2 P.M. // BRENDAN O'CONNOR

Binary Stellar Wind Collisions with Orbital Motion

2:20 P.M. // MORGAN CLARK

Ion-Beam Analysis of Artificial Turf

LIPPMAN 016

POLITICAL SCIENCE III

MODERATOR: MICHELE ANGRIST

2 P.M. // MARGARET GIRTON

A Glimpse at Teaching Leadership in America: Case Studies
Illuminate the Problems

2:20 P.M. // EDWARD ORAZEM

The Case for Natural Political and Moral Evolution

2:40 P.M. // CAOCHONG ZENG

Friend or Foe: An Analysis of the United States Military Bases
in Okinawa, the Republic of Korea, and the Republic of the
Philippines and the Local Conflicts They Involved

3 P.M. // MEAGHAN REID

Revisiting the Geneva Accords



SESSION V

3:30 – 5:10 P.M. ■■■ CONCURRENT ORAL PRESENTATIONS

WOLD 225

AEROGELS

MODERATORS: ANN ANDERSON & MARY CARROLL

3:30 P.M. // LUISA POSADA

Fabrication and Characterization of Ceria-Containing Aerogels

3:50 P.M. // SEAN FARRELL

Simulation of Flow Through Catalytic Aerogel Material Using Lattice-Boltzmann Methods

4:10 P.M. // JACOB CETNAR

Aerogel Based Diesel Particulate Filters

4:30 P.M. // YI TING PAUNG

Investigation of Doped Silica Aerogels for Drug Delivery Systems

4:50 P.M. // MAYA BAUER-MOSHI

Development of a Super-Insulating Aerogel Window: Production of Monolithic Silica Aerogel

KARP 002

ANTHROPOLOGY III

MODERATOR: KAREN BRISON

3:30 P.M. // CHLOE BARTLETT

Social Class Differences in Enrichment Programs

3:50 P.M. // SHARMEEN AZHER

She's Crying "Rape": An Indian City's Response to the Rape Crisis

4:10 P.M. // CLAIRE KELLY

Thinking about Toilets: Swachh Bharat and the Political and Social Motivations behind Sanitation Progress in India

4:30 P.M. // HANNAH GOTOFF, ABIGAIL SALAMONE, SHARMEEN AZHER, ANDREA BECKER, CLAIRE KELLY, AND HANNAH RAYHILL

Cleaning India: Examining Sanitation Issues in an Urban Slum

4:50 P.M. // ANDREA BECKER

Jaipur Foot: Where Prosthetics No Longer Cost an Arm and a Leg

KARP 005

BIOLOGY II

MODERATOR: ROBERT LAUZON

3:30 P.M. // KIMBERLY MACLEOD

Investigation of the Introduction of Avian Influenza to Poultry Stocks via Communal Water Contamination from Wild Waterfowl Populations

3:50 P.M. // MATTHEW WU

The Effects of an AFP Peptide Analog on the Proliferation of HepG2 Hepatocellular Carcinoma Cells

4:10 P.M. // KIM NGUYEN

Genomic Patterns of Divergence in *Drosophila Athabasca*

4:30 P.M. // SIERRA GOODFELLOW

Phosphagen Energetics in Developing Grasshoppers

4:50 P.M. // ANDREW PARNES

A Flow Cytometry Analysis of Apoptosis Reversibility in Mammalian Lymphocytes Following Cytokine Deprivation

LIPPMAN 016

ECONOMICS V

MODERATOR: KAYWANA RAEBURN

3:30 P.M. // KARA SCHWAB

Small Business Survival: A Study of New Entrepreneurial Business Endeavors

3:50 P.M. // KRISTEN LANDRE

Acquirer Shareholder Value Creation in United States Mergers and Acquisitions

4:10 P.M. // VICTORIA MAROTTA

Is the Union College Community Willing to Pay More for Fair Trade Coffee?

4:30 P.M. // FRANCIS ROCCO

Bitcoin Volatility and Currency Acceptance: A Time-Series Approach

4:50 P.M. // LAUREN GIBSON

Internship Satisfaction and Educational Performance

SESSION V

3:30 – 5:10 P.M. ■ CONCURRENT ORAL PRESENTATIONS

LIPPMAN 017

ECONOMICS VI

MODERATOR: TOMAS DVORAK

3:30 P.M. // KAROL JABLONSKI

Optimum Currency Areas and the European Experience: An Examination of Diverging Competitiveness Among Key EU Nations

3:50 P.M. // JOSHUA SCHWARTZ

The Impact of Wealth and Sentiment on Consumption: Before and After the Great Recession

4:10 P.M. // KEVIN TRAN

Is Graduate School Worth It? Evaluating the Return on Investment in a Master's Degree

4:30 P.M. // SARAH ELLERTHORPE

An Estimation of the Production Function of Water Utilities in the United States

4:50 P.M. // EMILY SU

Hospital Merger and Acquisition Effects on Healthcare Quality and Cost

WOLD 128

ELECTRICAL & COMPUTER ENGINEERING

MODERATOR: JAMES HEDRICK

3:30 P.M. // RILEY KONSELLA

Designing a Modular Strut for Union's Tensegrity Robot

3:50 P.M. // MATTHEW GOFF

Recording a Game of Go From Video

4:10 P.M. // JOHN KODERA

Ultrasonic Ride Height Control for Self-Levelling Air Suspension Systems

4:30 P.M. // JACKSON DOUGHTY

Experimental Setup for Evaluating the Health of Transformers

4:50 P.M. // PATRICK COWDEN

Audification and Sonification of Power Grid Data

OLIN 306

GEOLOGY IV: PROVENANCE AND FAULTING IN THE WESTERN U.S.

MODERATOR: JOHN GARVER

3:30 P.M. // ALISON HORST

U-Pb and Hf Geochronology of Schist of Sierra de Salinas in the Salinian Block, California

3:50 P.M. // NOLAN LESCALLEET

The San Juan Fault: an E-W Trending Left-Lateral Strike Slip Fault Zone Inferred from Analysis of Kinematic Indicators, Vancouver Island, British Columbia

4:10 P.M. // JULIE SOPHIS

Provenance of Detrital Zircon in the Upper Cretaceous Flysch and Mélange of the Yakutat Group, Alaska

4:30 P.M. // ALEXANDER DOLCIMASCOLO

Provenance and Age of Granite Clasts in the Yakutat Mélange, Alaska

BAILEY 201

INTERDISCIPLINARY SOCIAL PSYCHOLOGY

MODERATOR: GEORGE BIZER

3:30 P.M. // ANGELINA DISTEFANO

The Effect of Parent-Child Relationships on Choice of Intimate Partners

3:50 P.M. // MOLLY GRAETHER

Love Thy Attachment Figures as Thyself: Self-esteem Predicts Deviations in Adult Attachment Security

4:10 P.M. // BENJAMIN MOUNTAIN

The Adaptive Gender: Effects of Social Conformity on Gender Self-Perception

4:30 P.M. // BRIANNA SEID

Paid Maternity Leave Legislation: Do Laws Mandating Paid Maternity Leave Impact Attitudes Towards Working Mothers?

4:50 P.M. // SARALYNN (JUNWEN) SU

Effect of Narrative Transportation Varies by Product Type and Gender



SESSION V

3:30 – 5:10 P.M. ■■■ CONCURRENT ORAL PRESENTATIONS

SCIENCE AND ENGINEERING N205

MECHANICAL ENGINEERING— ENERGY APPLICATIONS

MODERATOR: RICHARD WILK

3:30 P.M. // ADAM FORTI

Integrating Triboelectric Nanogenerators into Wind Turbine Rotors

**3:50 P.M. // ADAM FORTI, ELIZABETH DONLON,
AND JOHN COSTA**

Green Fee Awardee 2017: Designing and Building a Multiple-Rotor Triboelectric Wind Turbine

4:10 P.M. // GRACE STEWART

Wave Power: Rotating Mass Wave Energy Converter

4:30 P.M. // DANIEL SAKAKINI

Durable eBike Battery-Swap Station

4:50 P.M. // SUNAN SUN

Modeling the Monthly Average Diurnal Solar Irradiation on a Vertical Surface

LIPPMAN 012

POLITICAL SCIENCE IV

MODERATOR: LORI MARSO

3:30 P.M. // JULIE NIEJADLIK

War's Children

3:50 P.M. // RAIESA FRASER

Examining Police Brutality Toward Black Lives and Social Justice Reform in the U.S. and Brazil

4:10 P.M. // GILLIAN HENRY

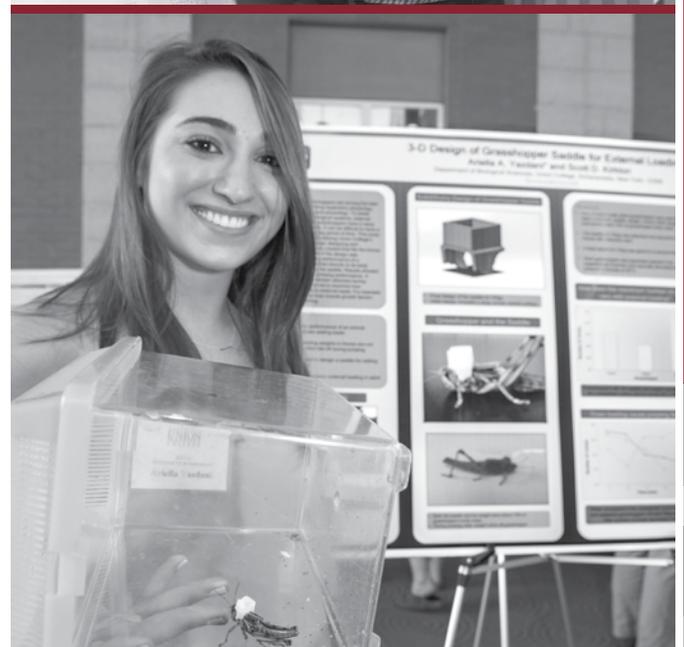
Monstrous Mothers: The Politics of Forced Mothering

4:30 P.M. // JUSTIN GUMP

When Personal Becomes Profitable: Data Collection and the Complex Link Between Corporate and Government Surveillance, and the Risk to Civil Liberties

4:50 P.M. // EMILY SPIDLE

Invisible and Incarcerated: Women in a Male-Dominated U.S. Prison System



STEINMETZ DANCE PERFORMANCE

FRIDAY, MAY 12 ■ 4 P.M. ■ NOTT MEMORIAL

THE 2017 LOTHRIDGE FESTIVAL OF DANCE

Faculty Sponsor / Director of Dance: Miryam Moutillet

FACULTY CHOREOGRAPHIES

STEREOTYPES

CHOREOGRAPHED BY MIRYAM MOUTILLET

MUSIC BY BLACK VIOLIN

Emily Alston, Carly Cherches, Sydney Conner, Yixin He, Abby Polott, Emily Su and Portia Taylor

DANCE EXPERIENCE

COLLABORATION DIRECTED BY MIRYAM MOUTILLET

Sydney DeCesare, Madalyn Engvold, Yixin He, Abby Polott, Portia Taylor, Julia Waszak and Shannon West

CLAP SNAP

CHOREOGRAPHED BY MARCUS ROGERS

MUSIC BY ICONA POP

Cassandra Call, Kathleen Matthews, Emily Rasmussen, Emily Su and Megan Wells

STAND BY ME

CHOREOGRAPHED BY MARCUS ROGERS

MUSIC BY SEAL

Cassandra Call, Kathleen Matthews, Emily Rasmussen, Olivia Ricci and Emily Su

STUDENT CHOREOGRAPHIES

DENY THE DEFAULT SELF

CHOREOGRAPHED BY EMILY ALSTON

MUSIC BY HIROYUKI SAURANO

Emily Alston, Emily Jennings, Grace Kernohan, Bianca Mielke and Maddison Stemple-Piatt

INSOMNIA

CHOREOGRAPHED BY AYANAH DOWDYE

MUSIC BY FATZ FOREAL

Madison Altman, Brendan Coleman, Ayanah Dowdy, J'Kela Smith and Maddison Stemple-Piatt

HEALING

CHOREOGRAPHED BY LILY HEROUT

MUSIC BY BIRDY

Lily Herout, Grace Kernohan, Bianca Mielke, Maddison Stemple-Piatt and Megan Wells

OPTIMIST

CHOREOGRAPHED BY GRACE KERNOHAN

MUSIC BY ZOË KEATING

Emily Alston, Sydney Conner, Lily Herout, Caitlin McMahon, Bianca Mielke, Danielle Pinney and Shannon West

FLY

CHOREOGRAPHED BY MADDISON STEMPE-PIATT

MUSIC BY LUDOVICO EINAUDI

Danielle Pinney and Shannon West

THE DEADLY 7 & I

CHOREOGRAPHED BY J'KELA SMITH

MUSIC BY BRUNO MARS, MAROON 5, WILLY WONKA AND THE CHOCOLATE FACTORY, BOW WOW, LABRINTH, MEEK MILL/ FRENCH MONTANA/ BOBBY SHMURADA, JULIE ANDREWS, BANKS, RIHANNA, KANYE WEST AND ZOEY DOLLAZ

Brendan Coleman, Ayanah Dowdy, Lily Herout, Grace Kernohan, Bianca Mielke, J'Kela Smith, Maddison Stemple-Piatt and Shannon West

REMEMBER ME

CHOREOGRAPHED BY GRACE KERNOHAN

MUSIC BY GAVIN JAMES

Olivia Cipriani, Grace Kernohan, Lily Herout, J'Kela Smith and Maddison Stemple-Piatt



STEINMETZ DANCE PERFORMANCE

FRIDAY, MAY 12 ■ 4 P.M. ■ NOTT MEMORIAL

STUDENT DANCE CLUBS

AFRICAN DANCE CLUB (ADC)

CHOREOGRAPHED BY JOCELYNE AKAMALIZA, AISSATTA DIALLO, EMMANUELLA OPPONG AND OUMOUM ZAKARIA

MUSIC BY RUNTOWN, JOEY B, CECILE KAYIREBWA, KALABONBON AND BEBETO

Jocelyne Akamaliza, Celia Briffaut, Irving Cortes-Martinez, Aissata Diallo, Beryl Isiji, Venesha Morris, Emmanuela Oppong, Ademilola Oyetuga and Oumou Zakaria

BHANGRA UNION

CHOREOGRAPHED BY TAYLOR ALLEN, MEGHANA DAMARAJU, KATHRYN EVANS, DANIELLE GREGG, AND BRENDA LIN

Taylor Allen, Meghana Damaraju, Kathryn Evans, Danielle Gregg, Jeamela Guilloteau, Kaylyn Hung, Savannah Jelks, Brenda Lin, Metri Kumar, Maha Mian, Dhruv Patel, Drishti Patel, Alan Perrotti, Jonathan Raymundo, Sapan Shah and Ankoor Talwar

HIP-HOP CLUB

CHOREOGRAPHED BY BRENDAN COLEMAN

Hayley Bennett, Giovanna Coelho, John Costa, Brendan Coleman, Angelica DeDona, Julia Delaney, Christie Dionisis, Ayanah Dowdye, Maha Mian, J'Kela Smith and Maddison Stemple-Piatt

JUST QUEENIN

CHOREOGRAPHED BY TRU EDWARDS AND LARISSA UMULINGA

MUSIC BY LIL JON, NICKI MINAJ, JASON DERULO AND OMARION

Shyan Brown, Tru Edwards, Saragrace Magre, Yesenia Negrón and Larissa Umulinga

STEP TEAM

CHOREOGRAPHED BY SHYAN BROWN AND SARAGRACE MAGRE

Richard Boakye, Shyan Brown, Angelica Dedona, Jennifer Duran, Nahom Ghile, Christa Guerrier, Anna Harootunian, Kelly Ijang, Corinne Jean-Gilles, Melvin Kelly, Saragrace Magre, Sumail Morton, Yesenia Negrón, Felika Poblach, Sharda Ramcharan, Larissa Umulinga and Jacinta Utubor

TERRA DANCE COMPANY

CHOREOGRAPHED BY EMILY SU

MUSIC BY LONGYIN

Danielle Gregg, Kaylyn Hung, Minh Le, Brenda Lin, Darlene Pedines, Elena Pettiford and Emily Su

UNION DANCE TEAM

CHOREOGRAPHED BY CAPTAINS GRACE KERNOHAN AND MADDISON STEMPE-PIATT

MUSIC BY WHITNEY HOUSTON

Kathryn Bangser, Anna Byrne, China Campagnuolo, Carly Cherches, Brendan Coleman, Sydney Conner, Julia Greene, Grace Kernohan, Danielle Pinney, Abby Polott, Emily Rasmussen, Allison Smith, J'Kela Smith, Maddison Stemple-Piatt and Shannon West

FOR THIS PERFORMANCE, WE WOULD LIKE TO THANK:

William E. and Anna S.
Lothridge 1879 Fund

Charles D. Lothridge '44
Edward Vilella Fellowship

Joan Gould Scholarships

Robert Bovard
Technical Director

Brittney Belz
Costume Coordinator

Andy Iorio
Musical Director-
Audio Editor

Ryota Matsue
Photographer-Filmmaker

Ayanah Dowdye
Work Study

STEINMETZ CONCERT 2017

FRIDAY, MAY 12 ■ 8 P.M. ■ MEMORIAL CHAPEL

UNION COLLEGE CHOIR

Music Director: Professor Dianne McMullen

Pianist: Elinore Farnum

UNION COLLEGE AND COMMUNITY ORCHESTRA

Music Director: Professor Hilary Tann

PROGRAM

**SELECTIONS FROM
EUROPEAN CHOIR TOUR**
(PLUS TELEMANN)

"GREAT GETTING-UP
MORNING"

Trad, arr. Ken Burton

*EIN FESTE BURG
IST UNSER GOTT*

G. P. Telemann
(1681-1767)

"ANGELIS SUIS DEUS"

J. M. Haydn
(1737-1806)

"IN NOMINE JESU"

J. Handl (Gallus)
(1550-1591)

SANCTA MARIA,
MATER DEI, K. 273

W. A. Mozart
(1756-1791)

SOPRANO

Elyse Clark '18
Emese Dunn '20
Chujun Li '18
Yizhi Lin '18
Hope Noonan-Stoner '20
Lili Wang '20

ALTO

Waner Chen '19
Shannon Collins '20
Yixin He '19
Anna Ko '17
Rachael Powers '17
Pamela Rice '19
Shreya Srivastava '20
Maria Van Nostrand '18

TENOR

Erkan Bertram '18
William Garner '18
Matthew Hacker '17
Nathan Gillespie '20
Nathan Oasis '19

BASS

Joshua Chin '19
Kyle Doney '20
Clifford Elike '20
Andrew Forte '18
Chandler Sturgeon '18
Anthony Yang Xu '19
Bowe Xu '19

PROGRAM

KARELIA SUITE
JEAN SIBELIUS

ALLEGRO FROM
PIANO CONCERTO
IN G MAJOR

W. A. Mozart
Cheechee Qi '20,
piano soloist

ALLEGRO MODERATO
FROM VIOLIN
CONCERTO IN
G MINOR

Max Bruch
Alexander Heywood '20,
violin soloist

ACADEMIC FESTIVAL
OVERTURE

Johannes Brahms

VIOLIN

Alexander Heywood '20
Lisa Gu '19
Dalila Haden '19

CELLO

Mushan Zhong '20

BASS

William Yao '20
Emily Coello '20

PICCOLO/FLUTE

Rachel Fox '20

FLUTE

Katie Gregory '20
Madelyn VanDorpe '18

CLARINET

Tommy Han '19

HORN

James Henry Scott '20

TRUMPET

Nicholas Meixsell '19
John Vu '19
Daniel Toland '18

PERCUSSION

Cheechee Qi '20



MUSIC

SATURDAY, MAY 13 ■ 2 P.M. ■ FRED L. EMERSON FOUNDATION AUDITORIUM, TAYLOR MUSIC CENTER

Directed by: Professor Timothy Olsen

FLUTE

Ben Megathlin '17

SAXOPHONE

Patrick Cowden '17

Lauren Elder '19

Jonathan Fields '18

Kyle Miller '18

Alex Pradhan '20

Nate Sears '18

TRUMPET

Nick Meixsell '19

Zack Porat '20

Dan Toland '19

TROMBONE

Scott Koszer '19

PIANO/ VOCALS

Nate Gillespie '20

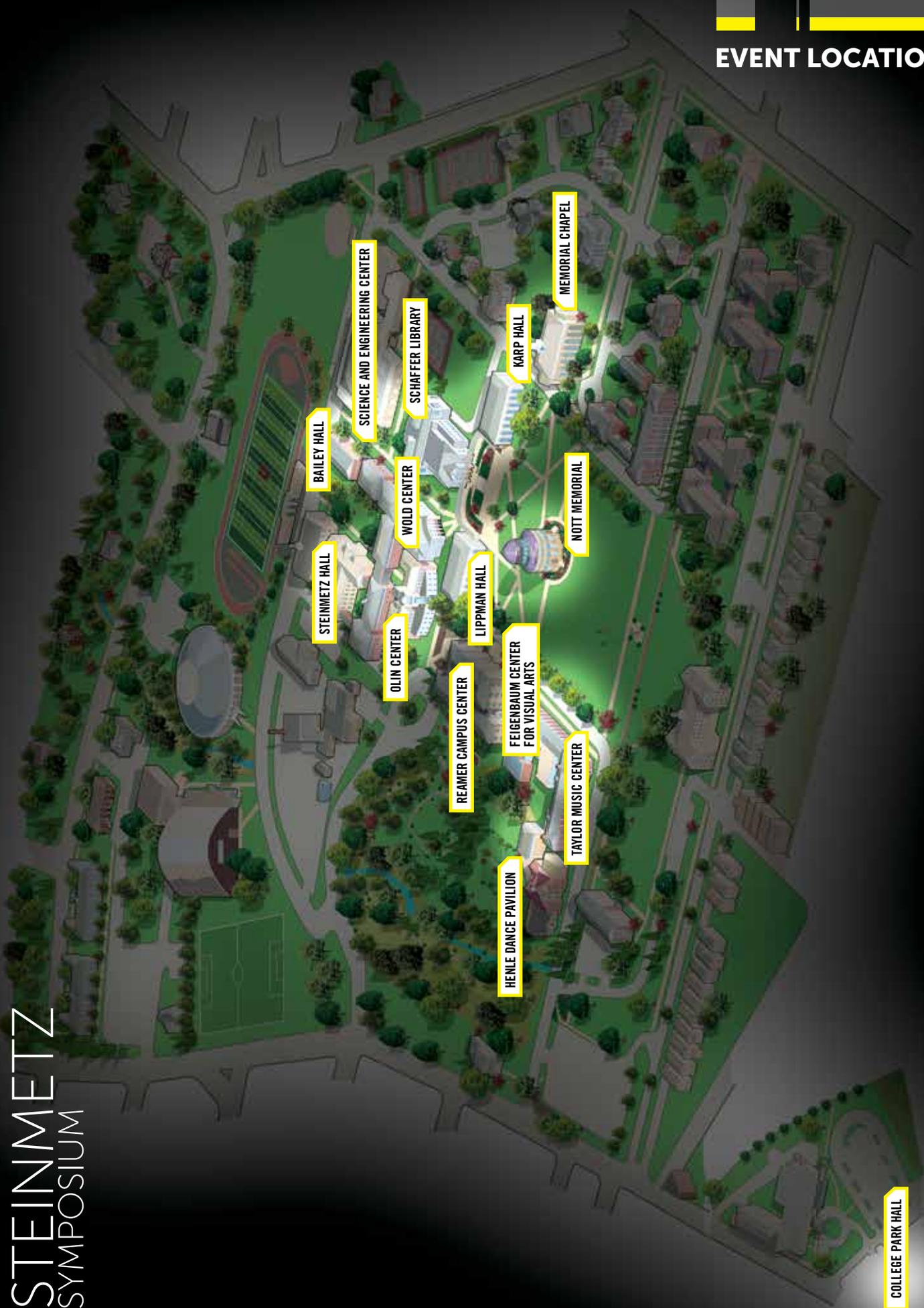
DRUMSET/PERCUSSION

Matt Cole '19



THE CHARLES PROTEUS
STEINMETZ
SYMPOSIUM

EVENT LOCATIONS



BAILEY HALL

STEINMETZ HALL

OLIN CENTER

REAMER CAMPUS CENTER

HENLE DANCE PAVILION

SCIENCE AND ENGINEERING CENTER

SCHAFFER LIBRARY

WOLD CENTER

LIPPMAN HALL

FEIGENBAUM CENTER FOR VISUAL ARTS

TAYLOR MUSIC CENTER

NOTT MEMORIAL

KARP HALL

MEMORIAL CHAPEL

COLLEGE PARK HALL



CITIZEN