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 the General Electric Company, he was widely regarded as America’s leading electrical engineer.

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 German government. He then 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 GE in 1892 and relocated to Schenectady.

Among his many other contributions to electrical engineering, Steinmetz also fostered the development of alternating current, which made possible the expansion of the nation’s electric power industry. 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 for the rest of his life. A superior 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.

Held yearly since 1991, the symposium features an extensive array of oral presentations, posters, performances and exhibits, with concurrent sessions held all day in lieu of regularly scheduled classes. It is an integral part of Union’s Recognition Weekend, which includes Prize Day, a tribute to student achievement in all fields.

As we commemorate the symposium’s anniversary, we also celebrate a culture of personal discovery that, for 25 years, has brought together coursework, faculty mentorship and teamwork to deepen our students’ understanding of self and subject.
SCHEDULE OF EVENTS

FRIDAY, MAY 8: STEINMETZ SYMPOSIUM

9 A.M. TO 5 P.M.
THE CHARLES PROTEUS STEINMETZ SYMPOSIUM
Presentations on student creative, scholarly and research achievement.
Programs and information available in the Arts Atrium, inside the north entrance to
Lippman Hall, in the Karp Hall lobby and inside the entrance to the Wold Center.
Student presentation sessions begin at 9 a.m.

9 A.M. TO 5 P.M.
EXHIBIT: PROTEUS! CHARLES STEINMETZ: UNION’S “WIZARD” OF THUNDERBOLTS
SCHAFFER LIBRARY ATRIUM
The exhibit include samples of Steinmetz’s unique shorthand, photographs
and other ephemera.

10 A.M. TO 3:30 P.M.
FILM SCREENING LEARNING LAB | SCHAFFER LIBRARY, ROOM 232
Divine Discontent: Charles Proteus Steinmetz, an hour-long documentary,
which will be running on a continuous loop, that traces the life of “The Wizard
of Schenectady,” Charles Proteus Steinmetz.
The production is under the leadership of independent filmmakers, Paul Frederick
and Bruce Carlin. The screening has been made possible through WMHT
Educational Telecommunications.

6 P.M.
STEINMETZ SYMPOSIUM BANQUET* | COLLEGE PARK HALL
Cash Bar at 6 p.m., followed by dinner at 6:30 p.m.
For presenters, their parents, alumni, guests and faculty sponsors
*REQUIRES PRE-REGISTRATION

8 P.M.
THE UNION COLLEGE AND COMMUNITY ORCHESTRA AND CHORALE
MEMORIAL CHAPEL

SATURDAY, MAY 9: PRIZE DAY

11 A.M. – 12:30 P.M.
PRESENTATION OF PRIZES AND RECOGNITION | MEMORIAL CHAPEL

12:30 P.M. – 1:30 P.M.
PRIZE DAY RECEPTION | REAMER CAMPUS CENTER PATIO

2 P.M.
JAZZ ENSEMBLE | EMERSON AUDITORIUM, TAYLOR MUSIC CENTER
# TABLE OF CONTENTS

## STEINMETZ SYMPOSIUM 2015

### FRIDAY, ALL DAY

<table>
<thead>
<tr>
<th>Session</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Exhibits</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Oral Presentations</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

### SESSION I

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 A.M. – 10:20 A.M.</td>
<td>Oral Presentations</td>
<td>5</td>
</tr>
</tbody>
</table>

### SESSION II

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 A.M. – 12:10 P.M.</td>
<td>Oral Presentations</td>
<td>10</td>
</tr>
</tbody>
</table>

### SESSION III

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:20 P.M. – 1:50 P.M.</td>
<td>Poster Presentations</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Engineering Project Display</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Minerva Fellows</td>
<td>19</td>
</tr>
</tbody>
</table>

### SESSION IV

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 P.M. – 3:20 P.M.</td>
<td>Oral Presentations</td>
<td>20</td>
</tr>
</tbody>
</table>

### SESSION V

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 P.M. – 5:10 P.M.</td>
<td>Oral Presentations</td>
<td>24</td>
</tr>
</tbody>
</table>

### STEINMETZ DANCE PERFORMANCE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 P.M.</td>
<td>STEINMETZ DANCE PERFORMANCE</td>
<td>28</td>
</tr>
</tbody>
</table>

### STEINMETZ CONCERT

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 P.M.</td>
<td>STEINMETZ CONCERT</td>
<td>30</td>
</tr>
</tbody>
</table>

### UNION COLLEGE JAZZ ENSEMBLE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SATURDAY AT 2 P.M.</td>
<td>UNION COLLEGE JAZZ ENSEMBLE</td>
<td>31</td>
</tr>
</tbody>
</table>

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**THE CONVENIENCE STORE WILL BE OPEN:**
- Friday, 8:45 a.m. – 11 p.m.
- Saturday, 10:15 a.m. – 11 p.m.
- Sunday, 4 p.m. – 11 p.m.

**THE BOOKSTORE WILL BE OPEN:**
- Friday, 8:45 a.m. – 4:30 p.m.
- Saturday, 10:15 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. – 2 p.m.
- Sunday, 10 a.m. – 2 p.m.

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A hospitality station serving light snacks and beverages is available in the Schaffer Library.
THE CHARLES PROTEUS STEINMETZ SYMPOSIUM
This exhibit is free and open to the public daily.

Please see the gallery guide for a complete listing of all exhibitors and works.

The following students are included in a group exhibit curated by the Visual Arts faculty. The exhibit represents outstanding work from 2014-2015 in drawing, painting, printmaking, photography, sculpture and digital art.

John Alverson      Aarifa Gowani      Michal Majer
Rachel Andreana   Kristofer Hammer    Kiana Miller
Nelligan Boff     Sonja Hansson      Kara Modiszewski
Allison Borek     John Hathaway      Taiana Ospina
McKenzie Brandon  Mark Hilbert       Alexa Passer
Paige Brown       Emily Hiller       Yi Ting Paung
Frank Chiarulli   Rachael Hunt       Mike Presendieu
Katherine Cuozzo   Ruoxuan Jia       Amy Provost
Rose Dumbrigue    Chelsea Kaiser     Valerie Purcell
Abigail Golodik   Haicheng Lin       Yujuan Qiu
Haley Gould       Greg Loring        Zachary Restifo

Nicole Shauffer   Julia Shivley
J’Kela Smith      J’Kela Smith
Julia Tierney     Allison Troy
Olivia Williamson  Tatum Yance
Yuanqing Zhu      Yuanqing Zhu
SESSION I

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

KARP 001

ANTHROPOLOGY I

**MODERATOR: KAREN BRISON**

9 A.M. | HEATHER MENDIOLA
Generational Differences in Values and Identity in Newfoundland

9:20 A.M. | MEAGHAN JAIN
A Comparative Analysis of Medical Pluralism in Fiji and the United States

9:40 A.M. | KELSEY CARROLL
Social Networks in College

BAILEY 312

BIOLOGY I

**MODERATOR: BRIAN COHEN**

9 A.M. | SARA ZELTSMAN
Investigation of FSH Responsiveness in a Granulosa Cell Line

9:20 A.M. | ADAM BENDER
The Effect of Circadian Rhythm on Cortisol and Perceived Stress Correlations

9:40 A.M. | EVAN LEIBOVITZ
Lack of Glucocorticoid Receptor Hypersensitivity-Related Polymorphisms in an Undergraduate Population

10 A.M. | ADAM WEISSE
Investigating the Role of Nerve Signals in Limb Regeneration of the Ambystoma mexicanum

KARP 005

CATALYTIC AEROGELS

**MODERATOR: MARY CARROLL**

9 A.M. | ZACHARY TOBIN, AUDE BECHU
Copper-Alumina Aerogels: From A to Z

9:20 A.M. | ADAM FORTI
Coating Cordierite with Aerogels for Use in Automotive Catalytic Converters

9:40 A.M. | RYAN BOUCK
Determining the Extent of Catalyst-Support Interactions on the Catalytic Potential of Metal Catalysts in Alumina-Based Aerogels

10 A.M. | YI CAO
Kinetic Modeling of Catalytic Aerogels

WOLD 225

CHEMISTRY I

**MODERATOR: JOANNE KEHLBECK**

9 A.M. | CHRISTINA BEBERNITZ
Identification and Synthesis of D. athabasca Cuticular Pheromones

9:20 A.M. | CHARLOTTE BLOOM
Tailoring Cadmium Selenide Nanocrystals with Mixed Ligand Systems

9:40 A.M. | COURTNEY BERG
Photolysis and Toxicity of Ultraviolet Filter Chemical Octyl Methoxycinnamate and its Photoproducts

Reflections...25 years later

"It was a great experience presenting in a scenario different than the college classroom in front of my peers. I wish the current students good luck. Don’t take life too seriously and enjoy every minute of your experiences at Union and presenting at the Steinmetz Symposium!"

—WENDY KAPLAN ’91, CAREER IN INFORMATION TECHNOLOGY FOR HEALTH CARE AND HIGHER EDUCATION, NEW HAMPSHIRE
# SESSION I

**9 – 10:20 A.M. || CONCURRENT ORAL PRESENTATIONS**

## KARP 006

### CLASSICS I

**MODERATOR: SARA WATKINS**

**9 A.M. | JULIE WARREN**  
An Experiment in Feminized Writing: A Modern Translation of Ovid’s “Heroides” 6 & 12 with Original Prose Compositions

**9:20 A.M. | JAMES HARRINGTON**  
What’s in a Name: The Heir and Successor to Julius Caesar

**9:40 A.M. | CHETNA PRASAD**  
Roman Military Medicine: The Development of the First Organized Healthcare Delivery System in the Ancient World

## WOLD 128

### COMPUTER SCIENCE

**MODERATOR: JOHN RIEFFEL**

**9 A.M. | BENJAMIN BERGER**  
Evolving Scalable Soft Robots

**9:20 A.M. | LIANA NUNZIATO**  
Identifying Character Persona Using Natural Language Processing

**9:40 A.M. | PETER DAVIS**  
What It Is to Be Conscious: Exploring the Plausibility of Consciousness in Deep Learning Computers

**10 A.M. | STEPHEN DIIORIO**  
Rendering Realistic Lens Flares Using Monte Carlo Methods

## HENLE DANCE PAVILION

### COSTUMED CHARACTER PORTRAYAL

**MODERATOR: BRITTNEY BELZ**

**9 A.M. | AVERY NOVITCH**  
Sartorial Societies: An Exploration of Late Nineteenth Century American Women’s Costume

## LIPPMAN 016

### ECONOMICS I

**MODERATOR: YOUNGHWAN SONG**

**9 A.M. | SARA MILTENBERGER**  
The True Cost of Oil on Society and the Environment

**9:20 A.M. | JORDAN PULLING**  
Controlling Carbon: A Study of National and Regional Emissions Trading Systems

**9:40 A.M. | RAM BATTI**  
The “Slimy Yet Satisfying” Potential of Edible Insects

**10 A.M. | ANN CANTWELL**  
Divorce Devastates: Does No-Fault State Divorce Law Have an Effect on Women’s Economic Well-being?

## LIPPMAN 017

### ECONOMICS II

**MODERATOR: TOMAS DVORAK**

**9 A.M. | CHRISTOPHER GARIBALDI**  
Does Digital Engagement Predict Enrollment: An Analysis of Applicants’ Behavior on Union College’s Website

**9:20 A.M. | JIAYI YAOLI**  
The Luxury Goods Market in China: Pricing, Marketing and Distribution

**9:40 A.M. | NATHAN GREENBERG**  
The Effect of Casino Gambling On Local Housing Markets: A Hedonic Approach: Perryville, M.D.

**10 A.M. | GEORGINA TEASDALE**  
Factors Influencing Purchasing Decisions
SESSION I

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

KARP 004

FRANCE AND FRANCOPHONE TOPICS I
MODERATOR: CHARLES BATSON

9 A.M. | ROBERT HAZZARD
A Generation Speaks Out: The Social Movement of Rap Music and Hip-hop Culture in 1990s France

9:20 A.M. | OEMA RAMBHAROSE
The French are What they Eat and How they Eat it; The History and Evolution of French Cuisine. (Les Français sont ce qu’ils mangent et comment ils le mangent; l’histoire et l’évolution de la cuisine française)

9:40 A.M. | MARY MACKENZIE
The Social Diagnosis of Autism Spectrum Disorder: An Examination of the Diagnostic Process in France

10 A.M. | ANNA MCGILLICUDDY
An Analysis of the Negritude Ideal through Leopold Senghor’s Written Work

KARP 002

GEOLOGY I: PETROLOGIC AND GEOCHRONOLOGIC CONSTRAINTS ON EVOLUTION OF MAGMA SYSTEMS AND ACCRETED TERRANES
MODERATOR: HOLLI FREY

9 A.M. | SARAH BREHM
Using Zircon Geochronology and Apatite Tephra Fingerprinting to Understand Magma Chamber Conditions Under Dominica

9:20 A.M. | EMILY CRAMPE
Whole-rock Geochemistry and Petrography of the Morne aux Diables Volcanic Center, Dominica

9:40 A.M. | TARA METZGER
Water Geochemistry Analysis of Streams and Hydrothermal Waters In Dominica, Lesser Antilles

10 A.M. | EILEEN ALEJOS
Zircon Fission Track Ages of the Orca Group on Hichinbrook Island, Alaska

SCIENCE AND ENGINEERING N205

MATERIALS IN ENGINEERING DESIGN
MODERATOR: RONALD BUCINELL

9 A.M. | HRISTINA MILOJEVIC
Evaluation of the Bond between Natural Fibers and Resins Formulated from Natural Oils

9:20 A.M. | RYAN GRANGER
Use of Mycelium Core to Form a Sustainable Composite Beam for the 2015 SAMPE Bridge Competition

9:40 A.M. | KAELEN HANSSON
Electro-deposition as a Rapid Prototyping Mechanism

10 A.M. | CRAIG WORLEY
The Development of a Composite Additive to Increase Safety and Performance of Wooden Baseball Bats

BAILEY 201

MATH I
MODERATOR: ROGER HOERL

9 A.M. | QUISQUEYA WITBECK, MAHRUKH BADAR, SHARMEEN AZHER
How Healthy Are U?: A Statistical Analysis of Student Use of the Wicker Wellness Center

9:20 A.M. | TIANYI YU
The Effect of China Joining the WTO: Change of Amount and Composition of Products and Trade Location

9:40 A.M. | JOSHUA KLINE
Analysis of the PeerRank Method for Peer Grading

10:00 A.M. | TRISTAN JOHNSON
Construction vs. Existence: Invariant Theory and the Hilbert Basis Theorem
SESSION I

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

EMERSON AUDITORIUM,
TAYLOR MUSIC CENTER

MUSIC
MODERATOR: DIANNE MCMULLEN

9 A.M. | ANDREW IVARSON
8 Weeks in the World of Piano Performance:
From Union to Amalfi

9:20 A.M. | PHAIK SUAN QUAH
Debussy’s Experiences as Winner of the Prix de Rome:
A Study Based on his Correspondence

KARP 105

PERFORMING AND VISUAL ARTS
MODERATOR: ZHEN ZHANG

9 A.M. | LUCAS RIVERS
Peach Blossom: A One-Act Play on the Contradicted
Human Condition

9:20 A.M. | ALLISON SMITH
Combating the Catcall: Contemporary Social
Critical Art

KARP 200

PHILOSOPHY
MODERATOR: KRISANNA SCHEITER

9 A.M. | DANIEL PALLIES
Self-Sampling and Consciousness

9:20 A.M. | CLAIRE KOKOSKA
The Virtue of Shame

9:40 A.M. | JULIA HOTZ
A Cyber-State of Nature? Exploring the Internet as
A “Global Social Space” for Third World Women

SCIENCE AND ENGINEERING N304

PHYSICS I
MODERATOR: SAMUEL AMANUEL

9 A.M. | WILLIAM HARNEY
The Quenching of Star Formation in the Group Environment:
HI Observations of Star-Forming Group Galaxies

9:20 A.M. | SHANICE WILSON, BAAHH-NAZOSHNNII BROWN-
ALMAWERI
Looking Under the Roof of Africa

9:40 A.M. | SHAUNA LEFEBVRE, MATHEW GISO
Coffee Production in Ethiopia

LIPPMA 101

POLITICAL SCIENCE I
MODERATOR: BRADLEY HAYS

9 A.M. | GARRETT OWENS
Political Narrative in Thematic Messaging in Republican
Presidential Campaigns Since 1984

9:20 A.M. | ALICIA BLECICH
Public Opinion and Regional Differences in Death
Penalty Policies

9:40 A.M. | SELENE PALOMO
The Rise of the Russian Republic after the Fall of
the Soviet Union

10 A.M. | LEO CAIN
Over-incarceration in the United States and the
Political Factors Behind it: With a Focus on International
Comparisons and Racial Disparities

KARP 008

POLITICS AND WAR IN THE 20TH CENTURY
MODERATOR: ANDREW MORRIS

9 A.M. | SHANON DOUGLASS
The Rise and Fall of the Friends of Irish Freedom:
How America Shaped Irish American Nationalism
in the Twentieth Century
SESSION I

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

BAILEY 207

PSYCHOLOGY I

MODERATOR: KENNETH DEBONO

9 A.M. | KATHERINE DREBIN
Targeted Online Advertisements: Effectiveness as a Function of Need for Cognition

9:20 A.M. | JANE MILLER
The Connection Between Self-Monitoring and Theory of Mind

9:40 A.M. | GILLIAN SLAVIT
The Role of Public and Private Self-Enhancement on Narcissists’ Product Choice

BAILEY 100

SOCIAL INTELLIGENCE

MODERATOR: CHRIS CHABRIS

9 A.M. | ADRIANNA RATAJSKA
Smart Shapes: Can Shapes Help Us Measure Social Intelligence?

9:20 A.M. | ELISA HUERTA
The Social Shapes Test: A New Measure of Theory of Mind Ability

9:40 A.M. | SHANNON HUGHES
Developing a New Test of Theory of Mind and Examining the Relationship Among Social Intelligence, Mood and Anxiety

LIPPMAN 014

SOCIOLOGY I

MODERATOR: TIMOTHY STABLEIN

9 A.M. | STACEY JACKSON
When Was the Last Time You Saw Your Doctor?: Fijian Perspectives on Contemporary Medicine, Culture and Community

9:20 A.M. | ANNA BYRNE
From Snow White to Anna and Elsa: Gender Role Portrayals in Disney Princess Movies

9:40 A.M. | MAX WILLINGER
Patient Perceptions of Privacy and the Role of Electronic Medical Records

10 A.M. | LAURA SCHAD
Recycling: Policy and Practice in New York State

LIPPMAN 201

2014 COMMUNITY SERVICE MINI-TERM: PART I

MODERATOR: JANET GRIGSBY

9 A.M. | ALEXANDER DOLCIMASCOLO
To Levee or Not to Levee: A Question for All of Us

9:20 A.M. | XIAOFEI XIE
Limits to Social Capital: How Do Communities Differ from One Another in Recovery Processes?

9:40 A.M. | TENZIN YOUDON
Just Be Quiet and Go Away: The Story of Maria E. Garzino’s Struggle to Make Things Right with the New Orleans Levees
SESSION II

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

**KARP 001**

**ANTHROPOLOGY II**  
**MODERATOR: LINDA COOL**

10:30 A.M. | MAHOLLY RAMOS  
A Comparative Analysis of Aging, the Good Death, and Mourning in America and India

10:50 A.M. | DEVIN BITTNER  
Cannibal Complex: The Western World’s Fascination with Human Flesh Eating

11:10 A.M. | EMMA GOLD  
Transgenderism in America

11:30 A.M. | MARGARET HOFFMAN  
“No Wimpy Women”: A Case Study of a Women’s Support Group

11:50 A.M. | ANDREA VAN RYZIN  
Under African Skies—The Western Experience in Africa

**BAILEY 201**

**APPLICATIONS OF PERSONALITY AND SOCIAL PSYCHOLOGY**  
**MODERATOR: JOSHUA HART**

10:30 A.M. | MOLLY MALONEY  
Causes and Consequences of Bullying

10:50 A.M. | ALICIA PALMER  
Correlates of Adjustment in International Chinese Students at Union College

11:10 A.M. | RACHEL FRISCH  
The Effect of Existential Concerns on Evaluations of Dating Websites

11:30 A.M. | ANNA MCGILLCUDDY  
Religion: A Concrete or Abstract Response to Mortality Reminders

**KARP 005**

**APPLICATIONS OF SILICA AEROGELS**  
**MODERATOR: ANN ANDERSON**

10:30 A.M. | BENJAMIN SILBERMAN  
Evaluation of the Thermal Performance of Silica Aerogel-Based Windows

10:50 A.M. | NOLAN SAYRE  
Investigation of Boat Hull Performance with Superhydrophobic Coating

11:10 A.M. | BENJAMIN SAPERSTEIN  
The Use of Silica Aerogels for Thermal Protection in Structural Firefighting Gear

**WOLD 225**

**CHEMISTRY II**  
**MODERATOR: MARGOT PAULICK**

10:30 A.M. | ANDREW ROUFF  
Synthesis and Evaluation of Trehalose Analogs for the Protection of Mammalian Cells

10:50 A.M. | PHILIP KRETSCHEMER  
Development of an LC-MS/MS-based Assay for the Quantification of Trehalose

11:10 A.M. | THOMAS KOLB  
Computational Analysis of Inorganic Complexes: Reconciling Theory and Experiment
SESSION II

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

LIPPMAN 016

ECONOMICS III

MODERATOR: YOUNGHWAN SONG

10:30 A.M. | YAQI GAO
The Impact of Exchange Rate Fluctuations on Labor Migration: Evidence from U.S. Nonimmigrant Visa Statistics

10:50 A.M. | KIRTI CHAKOTIE
The Affordable Care Act Dependent Health Insurance Mandate’s Effect on the Life Satisfaction of Young Adults

11:10 A.M. | WAYNE FU
Investigating the Effect of Marijuana Legalization on Income, Education and Depression

11:30 A.M. | KYLE KALANTA
The Future of Retirement: How Has the Change in the Full Retirement Age Affected the Social Security Claiming Decision of U.S. Citizens?

11:50 A.M. | MITSUKI FUKUDA
A Closer Look at Immigrants’ Wage Differential in the U.S.: Analysis Correcting for the Sample Selection Problem

LIPPMAN 017

ECONOMICS IV

MODERATOR: STEPHEN SCHMIDT

10:30 A.M. | MARISA LIEBERMAN
Does Participation in High School Sports Influence Your Income?

10:50 A.M. | BENJAMIN SCHLEGEL
Returns to Higher Education: A Generational Comparison

11:10 A.M. | ZACH SCHWARTZ
The Economic and Environmental Implications of the Construction of the Rivers Casino

11:30 A.M. | MARYSSA BROGIS
Prostitution, Rape and the Internet: Can Taking Prostitution “Indoors” Mitigate its Social Harms?

11:50 A.M. | PATRICK MAY
The Effect of Oil Dependence on Economic Growth

WOLD 128

ELECTRICAL AND COMPUTER ENGINEERING

MODERATOR: HELEN HANSON

10:30 A.M. | ANDREW IVARSON
Examining Self-Modifying Code

10:50 A.M. | MARK KHAZANOV
Share Jar: Integrating Charity into Everyday Life

11:10 A.M. | SAMANTHA GRIFFITHS
Modeling the Human Vocal Tract for American English Vowels

11:30 A.M. | TIMOTHY PALACE
Stand Alone Device for Chord Detection

KARP 200

ENGLISH I

MODERATOR: PATRICIA WAREH

10:30 A.M. | AVERY NOVITCH
Sexually Inactive: Sex and Death Imagery in Franco Zeffirelli’s Romeo and Juliet and Baz Luhrmann’s Romeo + Juliet

10:50 A.M. | MELISSA HARVEY
The Multiple Configurations of the Heteronormative Family in Early Modernist Literature

11:10 A.M. | HENRY CLAYTON
What’s Really Real: Irony and Sincerity in David Foster Wallace’s Infinite Jest

KARP 105

FILM FESTIVAL

MODERATOR: JAMES DE SÈVE, ANDREW FEFFER

10:30 A.M. | BENJAMIN FORMAN
Enviro-Cinematics

10:50 A.M. | MOLLIE GILCHRIST
Baikal Breathes

11:30 A.M. | KEWAN HARRISON, JOSEPH LAUB
The Making of Chasing Embers

11:50 A.M. | JAMES HICKS
Two Lenses, One Camera: The Shrinking Middle in the U.S. Congress
SESSION II
10:30 A.M. – 12:10 P.M. || CONCURRENT ORAL PRESENTATIONS

KARP 004

FRANCE AND FRANCOPHONE TOPICS II
MODERATOR: CHARLES BATSON

10:30 A.M. | MARY KATE POPE
The Reincarnations of Carmen: The Identities of a Myth

10:50 A.M. | JENNIFER SEXTON
Le pouvoir de l’accent: Les origines et les effets des accents français

11:10 A.M. | ELISABETH DEVINE
Madagascar: Past Present and Future

11:30 A.M. | JORDAN PULLING
The Development of Sustainable Agriculture: How France Promotes Sustainability with a Sustainable Diet

KARP 002

GEOLOGY II: ENVIRONMENTAL IMPACTS OF NATURAL AND ANTHROPOGENIC SOURCES
MODERATOR: JOHN GARVER

10:30 A.M. | CLAIRE NELSON
Radon Potential and Radioactivity of the Utica and Marcellus Black Shales of New York

10:50 A.M. | MATTHEW WORTHINGTON
Uranium and Radioactivity of the Lucerne and Gouldsboro Granites, Maine

11:10 A.M. | MICHELLE BERUBE
Tracking Water Pollution in New York Streams Using Stable Carbon and Nitrogen Isotopes of Primary Producers

LIPPMAN 012

HISTORY I
MODERATOR: KENNETH ASLAKSON

10:30 A.M. | ANNE TROJANOWSKI
The Urban Crisis in Schenectady

10:50 A.M. | EMILY SCHWARTZ
Henry VIII and Ireland: Imperial Authority and the Irish Political Nation

11:10 A.M. | STEVEN O’BRANOVICH
Otaku—A Case of Assigned Identities

11:30 A.M. | CAOCHONG ZENG
Christianity as Patriotism in the Republic of Korea

SCIENCE AND ENGINEERING N205

MECHANICAL ENGINEERING
MODERATOR: GLENN SANDERS

10:30 A.M. | TENZIN YOUDON
Designing a Humidifier System for the Union College Electrodynamic Balance

10:50 A.M. | GORMAN DONNELLY
The Design of an Optimized Patient-Specific Lumbar Spinal Fusion Cage Using Additive Manufacturing

11:10 A.M. | MICHAEL KOBERGER
Decreasing Car Weight by Investigating Alternative to Oversized Lead Acid Battery

11:30 A.M. | CHRISTOPHER PIGNATELLO
Integration of Peltier Coolers in a Coffee Maker

11:50 A.M. | CAELAN LAPINTE
CFD Modeling of the Flow of Resin into a Preform Mold of Natural Fibers
SESSION II

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

BAILEY 312

NEUROBIOLOGY OF DRAGONFLIES
MODERATOR: ROBERT OLBERG

10:30 A.M. | VICTORIA CARR
Binocular Inputs to Neurons that Code Prey Movement in the Dragonfly Central Nervous System

10:50 A.M. | BENJAMIN SHAPIRO, CARA SLUGASKI
Amplification of Neuronal Responses in the Dragonfly by the Octopamine Mimic, Chlordimeform

11:10 A.M. | NATALIA CIESIELSKA
Selective Attention and Prey Tracking in Dragonfly Larvae

11:30 A.M. | MARY BETH GADAROWSKI
Perception of Prey Distance by Visual Flight-Control Neurons in the Dragonfly

BAILEY 100

PERSONALITY AND SOCIAL PSYCHOLOGY
MODERATOR: GEORGE BIZER

10:30 A.M. | LILLIANNA GRIGGS
Brand Attachments and Social Feedback: The Moderating Effect of Self-Concept Clarity

10:50 A.M. | ASHLEY BECCIA
Consumer Preferences and the Valence-Framing Effect

11:10 A.M. | HOLDEN FRENCH
The Effects of Fanship on Impression Formation

11:30 A.M. | STACEY SYLVETSKY
Exercise and Emotion Regulation

SCIENCE AND ENGINEERING N304

PHYSICS II
MODERATOR: CHAD ORZEL

10:30 A.M. | CALEB NOVINS
Annealing 2-Decanol in Nano-confined Systems Part 1: Effects of Annealing Temperature

10:50 A.M. | ALEXANDER CLAIN
Annealing 2-Decanol in Nano-confined Systems Part 2: Effects of Annealing Time

11:10 A.M. | STEPHEN DIIORIO
Developing a Parametric Downconversion Apparatus for Single-Photon Experiments in Quantum Optics

LIPPMAN 101

POLITICAL SCIENCE II
MODERATOR: MARK DALLAS

10:30 A.M. | DAVIS CUTTER
Power Without Agents? A Theoretical Analysis of Power in a Complex and Globalized World

10:50 A.M. | MICHAEL DONADIO
The Politics of Sport: Unity and Division in Addressing Social Cleavages

11:10 A.M. | TIMOTHY HOBART
The BRICS Development Bank: The Rise of the BRICS and “Framing” the Reorientation of Power in World Politics

11:30 A.M. | MALCOLM KELLY
Principles and Policies: Examining the Counterterrorist Strategies of United States Think Tanks in the Wake of September 11th

11:50 A.M. | KARL HETZKE
Understanding the Islamist Constituency—A Case Study in Turkey
SESSION II

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

LIPPMAN 201

POLITICAL SCIENCE III

MODERATOR: CIGDEM CIDAM

10:30 A.M. | JACQUELINE WEISS
Latino Voter Mobilization Efforts and Participation in Presidential Elections: A Case Study of Florida and Colorado

10:50 A.M. | JENNA CORCORAN
Puffed and Processed: A Consideration of Breakfast Cereal as an American Phenomenon

11:10 A.M. | LUCAS RIVERS
The BRICS and the Existing Global Human Rights Regime: Is an Alternative Norms Regime in our Future?

11:30 A.M. | DIEGO BROZZON
"What We Didn’t Know": A Creative Thesis About Dictatorship in the Southern Cone of Latin America

BAILEY 207

PSYCHOLOGY II

MODERATOR: SUZANNE BENACK

10:30 A.M. | GEORGINA TEASDALE
Effects of Having an Autistic Sibling on Response Times

10:50 A.M. | JULIA BROOKS
#EdSoldiers: Exploring the Relationship of Instagram and Eating Disorder Recovery

11:10 A.M. | NATANYA MARCUS
The Effect of Gender and Social Support on Shyness and Depression in College Students

11:30 A.M. | NANCY PACE
Bullying in College: The Chirping Phenomenon

LIPPMAN 014

SOCIOLOGY II

MODERATOR: DAVID COTTER

10:30 A.M. | ARIELLE HOMER
The Divorce Revolution: The Role of Macro- and Micro-Level Factors in the Risk of Divorce

10:50 A.M. | ERIKA STEUER
The Secrets of U: Secret Revelation Among Union College Students

11:10 A.M. | XIAOFEI XIE
Capitalizing on Feminism: How Companies Utilize Feminist Themes to Market Products

11:30 A.M. | KELSEY HYDE
Cutting (or Maintaining) the Cord? : The Effect of Parental Involvement on the Lives of Emerging Adults

11:50 A.M. | JULIANNE QUINN
A Picture is Worth a Thousand Words: The Visual Culture of Twentieth Century Feminism in the United States
SESSION III

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

MODERATORS: BRAD BRUNO AND ANDREW HUISMAN

CARSON MILLER
Efficient Indoor Gardening with Automated Aquaponics

AUSTIN BANNISTER, MOLLY O’BRIEN
Cell-Permeable Analogs of Trehalose as Substrates for Mammalian Esterases

JAKOB MORAN
Integrated Analysis of Peptide and Protein Ensembles

MARYROSE ARNOLD
Adjustable Prosthetic Liner for Residual Limb Fluctuation

NATASHA SCOTT
The Use of Stable Isotope Analysis to Calculate Isotopic Ranges of Nitrogen and Carbon for Host Identification of the Adult Black-legged Tick

STEPHANIE SCHARBACH
Comparison of Biological Activity of Copper Complexes Containing Imidazole or Thiazole Moieties

SAMANTHA GRIFFITHS, CARSON MILLER
Designing a Micromouse Maze-Solving Robot

JENNA PRADHUMAN
Lactate Dehydrogenase Kinetics and Inhibition Using a Microplate Reader

MOLLY MCDONALD
Synthesis and Biological Reactivity of Cu(II) Thiazole and Imidazole Compounds

OLIVIA DWORCKIN
Understanding Dynamical Systems and Body Weight Change

JAKE ULRICH
Purification of the Enzyme Lactate Dehydrogenase Using FPLC

ELIZABETH ALMONTE
Mechanisms of Visual Motion Perception in a Lizard

KAILEE CUMMINGS
Color Discrimination Capabilities of the Lizard Anolis sagrei

ERVIN MENESES
Application of P.I Control Algorithm to Optimize Power Consumption of SAE Aero Aircraft

MATTHEW WENNER
High Level Systems Engineer for SAE Aero Design Team

NICHOLAS FERRARA
Understanding Intermolt Tracheal Changes Using Corrosion Casting

SAMUEL MARTIN, JOHN VOLPE
Design of an Unmanned Underwater Vehicle

SONIA SANDOVAL
Studying the Bioaccumulation of Mercury in Invertivore Bird Species of the Albany Pine Bush in Upstate New York

DANIEL TINKLEPAUGH
Investigating Industry: Profit from Preparation

JAMES HAWKINS
Flow Profiles over Super-hydrophobic Surfaces

JONATHAN PANG
Spectroscopic Characterization of Single Levitated Particles in the Union College Electrodynamic Balance

OLIVIA THURSTON
Radiation Damaged Zircon as a Potential Source of Uranium and Radon in the Lucerne Granite, Maine

GALEN MOYNIHAN
Microscopy of Advanced Carbon Materials

ANTONIA BATHA
Radon Emanation from Rocks of the Lucerne and Gouldsboro Granites, Maine

BAAHH-NAZOSHNNII BROWN-ALMAWERI, RILEY KONSELLA, KATHLEEN MATTHEWS
Micro-Aero Team: Learning How to Build a Small RC Plane

BRITTANY GAY
The Use of Synthetic Peptides to Investigate Caveolin-Follicle Stimulating Hormone Receptor Interactions
SESSION III

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

JOSHUA FIELDS
Society of Automotive Engineers (SAE) AERO: Structural Engineer

THOMAS MORAN
Analysis of Next Generation Solar Cell Materials Using Atomic Force Microscopy

JULIA ISAAC, ERIC ROSE
How Should a Social Robot Approach Someone for Help?

ALEXIS WOJTOWICZ
Using Accelerometers to Compare Different Competitive Swim Starts

STEPHAN GRANT
Evaluating the Feasibility of Ice Thermal Energy Storage

TRISTAN JOHNSON
Constructing a Sensory Environment for use in Social Robotics

COLBY HOWLAND
Analysis of d18O and d13C Values In Small Carbonate Samples on a Gas Bench-Delta Advantage Isotope Ratio Mass Spectrometer

ANTHONY PHAM
Gestures in Human-Robot Interactions

JULIA ISAAC, ERIC ROSE
Attracting People’s Attention to a Social Robot

ALEXANDER FUNEZ
Design and Manufacture of SAE Baja Frame

JOSEPH LAUB
Telemetry Systems for the SAE Aero Advanced Competition Aircraft

MADELINE FRIEZE
Remote Sensing of Aquatic Invasive Species

SARA COVELLI, THEODORE HUSS, NICHOLAS WEIDHAAS
2015 Green Fee Project: Solar Power for the New Upperclass Apartments

XUANHAN ZHAO
SEM-EDX Analysis of Aerosol Samples

BISIAYO FASHEMI
Analysis of Ibuprofen Doped Silica Aerogels as a Drug Delivery System

KENTO YAMAGUCHI
What’s Inside a Projector?

HTOO WAI HTET
Particle Positioning Control System for the Electrodynamic Balance

SAMUEL J. KLEINBERG
Synthesis and Characterization of Cobalt-Containing Aerogels for Automotive Exhaust Remediation

MARK KHAZANOV
Particles vs. Powerpoints: Exploring Project-based Courses through the Construction of a Tabletop Accelerator

STUART LOWE
Machine Learning Techniques for Music Prediction

CATHERINE KENNEDY
UWash: A Battery Charging Hand-Powered Washing Machine

ANA CARRANCO
Characterization of FSH Receptor Levels in a Human Granulosa Cell Line

ROBERT LATTANZI
Design of SAE Aero Auxiliaries and Landing Gear

LAM VO
Aqueous Multiple Component Reactions: Putting All the Pieces Together in Water

COLBY HOWLAND
Kinetic Constraints on the Exhumation of Cretan Marbles, Determined by Percent Transformation of Metamorphic Carbonates
**SESSION III**

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

**MODERATORS: SANDRA WIMER AND ERIKA WELLS**

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Title</th>
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<tbody>
<tr>
<td>KRISTY LANDRE</td>
<td>The Effects of Mood State on Risky Decision-Making</td>
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<td>KATE KOZAIN</td>
<td>Message Framing and Ad Evaluation: The Role of Self-Monitoring</td>
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<td>CHLOE BARTLETT</td>
<td>Working Memory and Capacity of Artists and Non-Artists</td>
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<td>SHANNA SHI</td>
<td>Attention and Bilinguism</td>
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<td>DANIEL SCHWARTZ</td>
<td>Qualities of an Ideal Coach</td>
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<td>ELANA GLICKMAN</td>
<td>The Color of Meaning</td>
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<td>AMY FISHER</td>
<td>China: Authoritarianism, Legitimacy and Happiness</td>
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<td>KEVIN BENTIVEGNA</td>
<td>Post and Get Disciplined? How College Athletes Are Using Social Media</td>
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<td>NOEMIE BECHU</td>
<td>The Relationship between Exercise Habits, Athletic Status and Resisting Ego-Depletion</td>
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<td>VICTORIA MAROTTA</td>
<td>The Role of Regulatory Focus in Predicting Athletic Positioning and Performance</td>
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<td>The Process and Creation of 3D Printed Fashion4Freedom Shoes</td>
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<td>Exploring the Juxtaposition between Nature and Technology with 3D Printing</td>
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<td>LAURA MUELLER</td>
<td>Sexual Assault Prevention at Union College</td>
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<td>ELIZABETH MAGAS</td>
<td>Twelve: Costumes from Design to Performance</td>
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<td>MAX ROEHMHO LD</td>
<td>Euthanasia and Human Experimentation in Nazi-Germany with an Ethical Analysis of the Human Experiments</td>
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<td>JULIE NIEJADLIK</td>
<td>The True Cost of Educating English Language Learners</td>
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<td>MEGHAN KEEGAN</td>
<td>Lucille Ball: An American Feminist and Actress</td>
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<td>TAYLOR GORMAN</td>
<td>Imperial Women of the Roman Empire and Greek Goddesses: A Dominance that Makes Women of the Two Realms Similar</td>
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<td>VICTOR MURPHY JR.</td>
<td>The Missing Link: The Lack of Black History Taught in Boston Public High Schools</td>
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<td>PAIGE BROWN</td>
<td>Faces of Union</td>
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*Reflections…25 years later*

“Ah, the Steinmetz Symposium, my chance to show all my fellow Unionites they were in the presence of the next Raymond Carver, minus the alcoholism and the tragic early death. Needless to say, they were not. Rather, a quarter century on, it’s clear they were in the presence of a very pretentious college senior who didn’t know what he didn’t know. Everyone was very complimentary though, so there was that last stroking of the ego before the big world stepped in like a big bucket of cold water to the face. Steinmetz and I had a good thing there in ’91. Maybe we can do it again sometime, minus the all-knowing pretension this time around.”

—MATTHEW FUTTERMAN ’91, REPORTER FOR THE WALL STREET JOURNAL, NEW YORK CITY
SESSION III

12:20 P.M. – 1:50 P.M. || ENGINEERING PROJECT DISPLAY
COURTYARD ADJOINING OLIN, WOLD, AND SCIENCE AND ENGINEERING

Many students in engineering undertake design projects or compete in intercollegiate design competitions, where the final products of the design, in addition to being technically complex and interesting, are rather large scale. Several of these projects will be on display with their designers on the patio outside the F.W. Olin Center, the Science and Engineering Center, and the Wold Center.

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) AERO-LIFT COMPETITION AIRPLANE
MATT WENNER
JOSH FIELDS
ROBERT LATTANZI
JOSEPH LAUB
ERVIN MENESSES
The SAE Aero-Lift competition challenges student teams from top college engineering programs around the world to design and build a small-scale airplane with the maximum possible cargo lifting capacity.

UNMANNED UNDERWATER VEHICLE
SAMUEL MARTIN
JOHN VOLPE
KEANU RODRIGUEZ,
ANDREW FONTAINE
An unmanned underwater vehicle (UUV) has been designed to explore the depths of Ballston Lake.

DESIGN AND CONSTRUCTION OF A PORTABLE SOLAR ENERGY CONVERSION SYSTEM
IAN DAVIES
This portable solar energy conversion system uses solar photovoltaic and thermal conversion technologies to provide both electricity and clean water. The system is also easily deployed, transportable by pick-up truck and able to withstand harsh environmental conditions.

EFFICIENT INDOOR GARDENING WITH AUTOMATED AQUAPONICS
CARSON MILLER
Electronically monitored aquaponics offer the revolutionary ability to produce fish and vegetative growth for human consumption in a highly efficient, sustainable ecosystem. One such ecosystem, on display under the first floor Wold stairs, includes electronics that will monitor the system and allow investigators to conduct further research in the aquaponics field.

Reflections…25 years later

“Getting ready for my presentation was a lot of work, and was a great capstone to build off of my honors thesis. It was a great learning experience and I remember it vividly! Advice for current students: I would encourage anyone to do independent research. Being self-directed to do research, but then learning how to do public speaking to describe it was a great experience.”

— ALAN EISENBERG ’91, VICE PRESIDENT FOR FEDERAL GOVERNMENT RELATIONS, CELGENE, WASHINGTON, D.C.
SESSION III

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

Eleven Minerva Fellows, who have just returned from nine months volunteering in India, China, Cambodia, Uganda, South Africa and Ecuador, will display images from their time away in a poster and video session. All fellows will be on hand to discuss their experiences.

SPONSOR: THOMAS MCEVOY

RAHUL PUTTAGUNTA
Johannesburg, South Africa

JOSEPH MAHER
Durban, South Africa

MIRIAM HAMMER AND SAMANTHA WYNN
Siem Reap, Cambodia

DANIELLE LASSTTER AND FORRESTER ROSS
Jinan, China

DAVID MASTERSON
Bagru, India

SAMIANTA MURATORI AND GABRIELLA ROMERO
Esters de Platano, Ecuador

ILYENA KOZAIN AND BILLY PHILLIPS
Ddgeya Village, Uganda
SESSION IV
2 – 3:20 P.M. || CONCURRENT ORAL PRESENTATIONS

SCIENCE AND ENGINEERING N205
ANALYSIS, DESIGN AND MODELING CONSIDERATIONS IN ENGINEERING
MODERATOR: DAVID HODGSON

2 P.M. | CHRISTOPHER KELLY
Employing GIS to Study Erosion, Risk Assessment, Mitigation, Cost Analysis and Coastal Engineering Practices on the East Coast of the United States

2:20 P.M. | JONATHAN HUNT
Building Energy Modeling and Simulation Using EnergyPlus

2:40 P.M. | IAN DAVIES
The Design and Construction of a Portable Solar Energy Conversion System

3 P.M. | YASSER EL HAMOUMI
Computational Crack Growth Modeling Using the Displacement Discontinuity Method

KARP 001
ANTHROPOLOGY III
MODERATOR: JEFF WITSOE

2 P.M. | ALEX TANCRELL-FONTAINE
Was Title IX Enough? A Case Study at Union College

2:20 P.M. | ERIKA STEUER
“The Land of a Thousand Graves”: The Transformation of Burial Rites in Rwanda

2:40 P.M. | KATHERINE BARNER
Feminism and Gender Roles in Punk Culture

3 P.M. | SARAH KADER
Perceptions of Care: Interactions Among Policy, Non-Governmental Organizations and Refugees in Jordan

BAILEY 312
BIOLGY II
MODERATOR: BRIAN COHEN

2 P.M. | ALYSON STAATS
The Hormone Dependence of the Interaction Between the Human Follicle Stimulating Hormone Receptor and Caveolin

2:20 P.M. | WARREN THOMPSON
Investigating the Spare Receptor Hypothesis: Ligand-Independent Phosphorylation of the Follicle Stimulating Hormone Receptor

2:40 P.M. | JOHN STEINHARTER
Mutagenesis of the putative Caveolin Interaction Motif in the Human FSH Receptor

BAILEY 207
CAREGIVING AND PUBLIC HEALTH NEEDS
MODERATOR: CAY ANDERSON-HANLEY

2 P.M. | KATHERINE POULIOT
Evaluating the Effectiveness of Care Choices, a Home-Based Palliative Care Program

2:20 P.M. | TRAVIS BARKER
Addressing Schenectady’s Most Pressing Public Health Needs

2:40 P.M. | MARISA THURIN
Expressive Writing to Alleviate Stress of Caregivers of Persons with Cognitive Decline
SESSION IV

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

KARP 006

CLASSICS II
MODERATOR: TOMMASO GAZZARRI

2 P.M. | DAISY TINAJERO
The Ancient Greeks Onscreen through the Lens of Modern Society

2:20 P.M. | CYDNEE SOMERA
The Fort at Halmyris: How Archaeological Evidence from the Military Fort at Halmyris Reflects the Roman Empire's Decline

2:40 P.M. | MARYGRACE WAJDA
Virtue in Cicero

WOLD 128

ELECTRICAL ENGINEERING
MODERATOR: TAKASHI BUMA

2 P.M. | HIEN NGUYEN
Transforming a Toaster Oven into a Solder Reflow Oven

2:20 P.M. | NICHOLAS GOODRICH
Secure Electronic Voting System

2:40 P.M. | JEFFREY WETTSTEIN
Remote Water Metering in Venecia, Nicaragua

3 P.M. | CATHERINE KENNEDY
A Battery Charging Hand-Powered Washing Machine

KARP 200

ENGLISH II
MODERATOR: JILLMARIE MURPHY

2 P.M. | THOMAS ARCURI
The Somewhat Less than Super Adventures of the Gargoyle and the Sparrow, including the Pseudo-comical Incident of the Fan Fiction and What Transpired After

2:20 P.M. | MEGHAN HILL
Heroes, Heroines and Villains: A Comparative Analysis of Character Depiction in the Grimm Brothers' Fairytale Collections and Modern Adaptations

2:40 P.M. | DOROTHY HAZAN
As We Age: A Short Novel

3:00 P.M. | CAITLIN LENTLIE
Coleridge and Davy: New Materialism and Poetry and Science

KARP 002

GEOLOGY III: LAKE CORES AS RECORDERS OF HOLOCENE CLIMATE CHANGE
MODERATOR: DON RODBELL

2 P.M. | NICHOLAS WEIDHAAS
Biogeochemistry and Sediment Transport through a Tropical Andean Paternoster Lake System

2:20 P.M. | JAMES BARRETT
Sedimentological Record of Flooding in the Western Mohawk Valley Recorded in an Ox Bow Lake near Utica N.Y.

2:40 P.M. | COREY HEDGES
Sedimentological Record of Large Magnitude Floods Recorded in Collins Pond, Scotia, N.Y.
SESSION IV

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

LIPPMAN 017

HISTORY II
MODERATOR: ANDREW MORRIS

2 P.M. | RACHEL REFKIN
Liberté, Egalité, Fraternité: The French Hand in the Rise of Hutu Extremism and the Rwandan Genocide

2:20 P.M. | SHAYNA HAN
An Exploration in Evolution: Nancy Drew and her Daughters

2:40 P.M. | LUCAS HALL
Tracking the Tupamaros: The Movimiento de Liberación Nacional-Tupamaros’ Transition from Guerrilla Movement to Political Party and the Success of the Frente Amplio (1958-Present)

3 P.M. | ERIN STEVENS
Environmental Education: Working Toward an Eco-Centric Future

BAILEY 201

MATH II
MODERATOR: BRENDA JOHNSON

2 P.M. | JAMES RATCLIFFE
Zero Entries of Pascal’s Triangle

2:20 P.M. | WILLIAM STEARNS
Groups of Order 12

2:40 P.M. | FRANCIS ROCCO
Steinmetz Solids and their Properties

3 P.M. | WILLIAM DOYLE
A Brief Introduction to Topology: Creating Configuration Spaces from Topological Spaces

BAILEY 100

MATH III
MODERATOR: JEFF JAUREGUI

2 P.M. | THOMAS KOLB
Investigation and Applications of Fourier Series

2:20 P.M. | NATHANIEL ONNEN
Partial Differential Equations and Schrödinger’s Equation

WOLD 225

NANOMATERIALS
MODERATOR: MICHAEL HAGERMAN

2 P.M. | CHASE MARTIN
Electrical Characterization of Nanomaterials

2:20 P.M. | PHAIK SUAN QUAH
Conductive Polymer Nanoassemblies for Solar Applications

3 P.M. | RYAN BOUCK
Self-Assembly of Polyaniline Nanosheets using Vanadium Exchanged Laponite Hydrogels
SESSION IV

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

LIPPMAN 101

POLITICAL SCIENCE IV

MODERATOR: ZOE OXLEY

2 P.M. | MAERGRETHE BOX
Racial and Ethnic Profiling in Law Enforcement and the Criminal Justice System

2:20 P.M. | PATRICK SULLIVAN
Urban Politics: A Focus on Public Education across Cities in New York State

2:40 P.M. | KARLEE BERGENDORFF
The Smiling, the Sick and the Suffering: Snapshots of Syrian Displacement

3 P.M. | DEBORAH GRINHAUS
America’s First Ladies: A Catalyst for Change in Female Leadership, Power and Influence or a Reinforcement of Gender Norms in American Society?

LIPPMAN 014

SOCIOLOGY III

MODERATOR: MELINDA GOLDNER

2 P.M. | FATIMA HOSAIN
Three Models for Integrating Complementary/Alternative Methods with Conventional Medicine

2:20 P.M. | SAMANTHA KROPP
Understanding Childhood Hunger in the United States

2:40 P.M. | EVA ZIMMERMAN
Exploring Doctor-Patient Communication in the Context of Complementary and Alternative Medicine

3 P.M. | DARCY BERGER
The Privilege Paradox: The Effect of Affluence on the Adolescent Experience

KARP 004

SPANISH ACROSS DISCIPLINES I

MODERATOR: MARITZA OSUNA

2 P.M. | ASHLEY BECCIA
The Role of Technology in the Acquisition of a Second Language

2:20 P.M. | AUSTIN BURNHAM
The Seriousness of Environmental Problems in Argentina

2:40 P.M. | DANA DONATI
9/11 The Role of the United States as Victim and Aggressor

3 P.M. | MICHELE GUYETTE
The Effect of Language on Individuals’ Perception of the World

LIPPMAN 201

2014 COMMUNITY SERVICE MINI-TERM: PART II

MODERATOR: JANET GRIGSBY

2 P.M. | JULIA SHIVELY
A Devastating Disaster: How Hurricane Katrina Impacted the Mental Health of Southern Louisiana

2:20 P.M. | ANTON MOROZOV
Hurricane Katrina and the Gulf of Mexico Oil Spill: Social Causes and Impacts of Natural and Technological Disasters
SESSION V

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

KARP 001

ANTHROPOLOGY IV
MODERATOR: ROBERT SAMET

3:30 P.M. | ERIN KINGSLEY
In Terms of Respect: Negotiating Kinship amid the Plural Identities of Indo-Guyanese Americans in Schenectady, N.Y.

3:50 P.M. | LINDSEY HUNT

4:10 P.M. | OLIVIA POWERS
Ripples of Good Intentions; the Shift from Development to Corporate Social Responsibility

WOLD 128

BIOENGINEERING AND ELECTRICAL ENGINEERING
MODERATOR: LUKE DOSIEK

3:30 P.M. | JEREMY VICK
Increasing the Resolution of Power Grid Monitoring Using Inexpensive Hardware

3:50 P.M. | TIMOTHY SHEEHAN
Design of a Double-dose Epinephrine Auto-injector

4:10 P.M. | DANI LIU
The Development of a Wireless Optical Heart Rate Monitor for Running

4:30 P.M. | BIN CHEN
Monitoring Bone Fracture Healing with Acoustic Radiation Force Impulse (ARFI) Imaging

BAILEY 312

BIOLOGY III
MODERATOR: STEVEN RICE

3:30 P.M. | BRINA DILLON
Creating Photosynthetically Active Canopies on 3D Printed Moss Models

3:50 P.M. | MY HOANG
The Role of Non-muscle Myosin II in Early Chick Morphogenesis

4:10 P.M. | ERIC WARD
The Effects of Canopy Structure on Photosynthesis in Sphagnum Mosses

4:30 P.M. | MARY CORNELIA PINKSTON
Flow Cytometry and Biochemical Analysis of Apoptotic Mouse HT-2 T Lymphocytes

LIPPMAN 016

ECONOMICS V
MODERATOR: SHELTON SCHMIDT

3:30 P.M. | XI GAO
Effects of China’s Trade and Investment on the Economies of East and Southeast Asia

3:50 P.M. | MEREDITH MOSHIER
The Six-Year Hangover: An Assessment of the Effectiveness of Unconventional Monetary Policy in Dealing with Debt Overhang within the U.S. Economy

4:10 P.M. | RAN WANG
Peer-to-Peer Lending Industry and Risk Control Measures

4:30 P.M. | ALEX GOLDSMITH
Affordable Care Act through the Lens of Foreign Healthcare Systems

4:50 P.M. | KYLE BIRNBAUM
Quantitative Assessment of the Presence of a Bubble in the Higher Education Market
3:30 – 5:10 P.M. || CONCURRENT ORAL PRESENTATIONS

KARP 200

ENGLISH III
MODERATOR: JILLMARIE MURPHY

3:30 P.M. | MORGAN CLARK
Creating Fairy Tales: More than Meets the Eye

3:50 P.M. | ANNA FLORES
“Listen to Many”: Intersectionality, Tragedy and William Shakespeare

4:10 P.M. | ETHAN PEARCE
The World Is Yours: Hip-hop and Minor Literature

WOLD 225

ENZYMES IN PHYSIOLOGY AND BIOCHEMISTRY
MODERATOR: KRISTIN FOX

3:30 P.M. | MATTHEW OLSON
Changes in Grasshopper Jumping Muscle during Intermolt Development

3:50 P.M. | ANDREW GLASER
Expression, Refolding and Purification of the Full-length Metacaspase Scp3

4:10 P.M. | ALEXANDER JAKSIC
Cloning, Expression in E. coli and Refolding of Individual Metacaspase Scp3 Subunits

4:30 P.M. | TRAVIS BARKER
Expression and Enzymatic Activity of the Metacaspase Protein Scp3 from the Fungus S. commune

KARP 002

GEOLOGY IV. SPELEOTHEMES AS CLIMATE PROXIES FROM STABLE ISOTOPE AND CHEMICAL ANALYSIS
MODERATOR: DAVE GILLIKIN

3:30 P.M. | CHRISTOPHER KELLY
Analysis of Speleothem Trace Element Signatures as a Holocene Paleoclimate Proxy at Gage Caverns, N.Y.

3:50 P.M. | ROBERT QUEIROLO
Late Holocene Climate Reconstruction through Stable Isotopes In a Speleothem From Gage Caverns, N.Y.

4:10 P.M. | MATTHEW MCGAVICK
Analysis of the Isotope Geochemistry of Speleothems as a Proxy for Eemian Climate: An Analog of the Future

LIPPMAN 012

HISTORY III
MODERATOR: STEVEN SARGENT

3:30 P.M. | JULIA SHIVELY
Who Took What: Soviet Spies in America throughout the Twentieth Century

3:50 P.M. | REBEKA KELMAR
Huygens: The Missing Link between Descartes and Newton

4:10 P.M. | MAYUR PATEL
Paracelsus’ Noble Defeat: The Attack on Galenic Medicine

Reflections... 25 years later

“I often say it was one of my most formative professional experiences. It taught me that when speaking about something technical to people from a variety of backgrounds, I need to be able to translate it in a way that makes it relevant to the broad audience and not just a subset.”

—MATT MALATESTA ’91, VICE PRESIDENT FOR ADMISSIONS, UNION COLLEGE, SCHENECTADY
SESSION V

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

**LIPPMAN 017**

INFRASTRUCTURE: HISTORY AND POLITICS

**MODERATOR: ANDREW MORRIS**

3:30 P.M. | ERICH GROME
Holding Water: Examining the Evolution of the New York State Canal System at the Turn of the Twentieth Century and the Accompanying Economic, Political, and Cultural Arguments (1895-1905)

3:50 P.M. | MAXIMILIAN TIREY
The Art of Drawing Political Borders

4:10 P.M. | THOMAS SCOTT
Three Gorges Dam: Political Triumph and Environmental Catastrophe

**BAILEY 201**

MATH IV

**MODERATOR: LEILA KHATAMI**

3:30 P.M. | BRIAN RICH
The Sign of a Permutation: The Relation between Inversion Pairs and Transposition Products

3:50 P.M. | KELSEY HYDE
Three Options for Proving the Irrationality of Pi

4:10 P.M. | ROSS FIDLER
History of Mathematical Proof

4:30 P.M. | MEGAN JENKINS
A Combinatorial Approach to Commuting Nilpotent Matrices

4:50 P.M. | VICTORIA CANNILLO
Exploring Arithmetica: Diophantine Mathematics and its Impact

**BAILEY 207**

NEUROSCIENCE

**MODERATOR: CAY ANDERSON-HANLEY**

3:30 P.M. | JULIE WARREN
Neuropsychological Benefit from Aerobic and Cognitive Exercise: Role of Flow and Spirituality

3:50 P.M. | MOLLY MALONEY
Interactive Physical and Cognitive Exercise (iPACE) Pilot Studies

4:10 P.M. | REBECCA SHAIT
Psychostimulant Use among Undiagnosed College Students: Debunking the Myth of Cognitive Benefits and Revealing Side Effects

4:30 P.M. | DANIEL GROSSMAN
Mindfulness Training: Impact on the Acoustic Startle Response

4:50 P.M. | MICHAEL KARLOVICH
Mindfulness: Relationship between Self-Report and Endogenous and Exogenous Attentional Resource Regulation

**LIPPMAN 101**

POLITICAL SCIENCE V

**MODERATOR: ANTHONY DELL’AERA**

3:30 P.M. | LACEY REIMER
A Comparative Analysis of Climate Change Policy in the United States and Russia

3:50 P.M. | ADAM BECKER
The American Health Care System, Health Reform and the Effects of the Affordable Care Act

4:10 P.M. | GARRETT LAWSON
Film and Politics during Bush-Cheney: The Allegorical Relation, Intersection and Commentaries Film Made from 2004 to 2008
SESSION V

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

LIPPMAN 014

SOCIOLOGY IV

MODERATOR: JANET GRIGSBY

3:30 P.M. | SANDYA SAINVIL
Soldiers of the Shadows: An In-depth Analysis of African American Experiences during the Vietnam War

3:50 P.M. | DANIELLE STANSKY
Assessment of the Adequacy of Education and Training of Health Professionals Treating Special Needs Patients

4:10 P.M. | VIOLET DOUCETTE
The Role of Environmental Education as a Tool for Conservation and Sustainable Development: A Comparative Case Study of the United States and the Dominican Republic

4:30 P.M. | JILL ACKERMANN
U.S. Nuclear Testing at the Nevada Test Site: An Environmental Justice Perspective

KARP 004

SPANISH ACROSS DISCIPLINES II

MODERATOR: MARITZA OSUNA

3:30 P.M. | ELIZABETH HURLEY
Flowers Regrow in Foreign Lands: The Discriminatory Representation of Latin-American Immigrants in Spanish Film

3:50 P.M. | RACHAEL POWERS
The Freedom in Nueva Canción; Protest Music from Chile between the 1960s and 1970s

4:10 P.M. | CLAIRE PULEIO
The Future Grand Canal of Nicaragua

LIPPMAN 201

POLITICAL SCIENCE VI

MODERATOR: CIGDEM CIDAM

3:30 P.M. | CHELSEA MICKEL
Russian Military Intervention in the Post-Soviet Space

3:50 P.M. | LOUIS FIERRO
Structural Limitations to the Success of Third Parties in the American Political System

4:10 P.M. | ROSS AARON
Maritime Piracy in the Indian Ocean

4:30 P.M. | KELLY MEARS
Sex Work and the Case for Legalization or Decriminalization in Australia

4:50 P.M. | ABIGAIL MCNAMEE
Combating Cultures of Impunity after Insurgent Violence: Case Studies on Nepal, Sri Lanka and Peru

BAILEY 100

PSYCHOLOGY III

MODERATOR: STEPHEN ROMERO

3:30 P.M. | YILUN ZHANG
Is Common Time Simply Binary Time? An Exploration of Binary Metrical Processing

3:50 P.M. | NEEL PATEL
A Study in Negative Transfer

4:10 P.M. | JULIA TIERNEY
Does Impulsivity Prolong Attentional Blink?

4:30 P.M. | JAKUB KACZMARZYK
Does Lumosity.com Make You Smarter?
STEINMETZ DANCE PERFORMANCE

4 P.M. || NOTT MEMORIAL

THE 2015 LOTHRIDGE FESTIVAL OF DANCE
Faculty Sponsor / Director of Dance: Miryam Moutillet

FACULTY CHOREOGRAPHIES

EXCERPT FROM
HER LIFE WALTZ
Choreographed by Laurie Zabele Cawley
Music by Royer’s One Man Band
Maryssa Brogis, Olivia Cipriani, Sydney Conner, Stephanie Dick, Lily Herout, Mary MacKenzie, Christina Pastore and Megan Wells

PINK PANTHER
Choreographed by Miryam Moutillet and Marcus Rogers
Music by Henri Mancini
Cassandra Call, Jillian Callanan, Marisa Lieberman, Laura Schad, David Thai, Megan Wells and Fadeelah Ziyad-Islam

CROUCHING TIGER
Choreographed by Miryam Moutillet
Music by Tan Dun
Olivia Cipriani, Lily Herout, Grace Kernohan, Avery Novitch and Gerardo Reyes

BURLESQUE
Choreographed by Marcus Rogers
Song by Cher
Cassandra Call, Giorgia Comeau, Grace Kernohan, Marisa Lieberman, Elizabeth Magas and Fadeelah Ziyad-Islam

TWILIGHT
Choreographed by Miryam Moutillet
Music by Alexander Desplat
Jillian Callanan, Olivia Cipriani, Giorgia Comeau, Grace Kernohan and Laura Schad

RHYTHMIC WARRIORS
Choreographed by Marcus Rogers
Music by A.R. Rahman
Jillian Callanan, Cassandra Call, Megan Wells and Kathryn McKeans

STUDENT CHOREOGRAPHIES

TKO
Choreographed by Maryssa Brogis
Song by Justin Timberlake
Maryssa Brogis, Olivia Cipriani, Giorgia Comeau, Hannah Itskov and Fadeelah Ziyad-Islam

BEAUTY WITH STRENGTH
Choreographed by Giorgia Comeau
Song by Lorde
Jillian Callanan, Giorgia Comeau, Lily Herout, and Maddison Stemple-Piatt

SILHOUETTES
Choreographed by Lily Herout
Song by Of Monsters and Men
Lily Herout, Grace Kernohan and Maddison Stemple-Piatt

SHOW ME HOW YOU BURLESQUE
Choreographed by Fadeelah Ziyad-Islam
Song by Christina Aguilera
Grace Kernohan, Avery Novitch, Laura Schad and Maddison Stemple-Piatt
STEINMETZ DANCE PERFORMANCE

4 P.M.  ||  NOTT MEMORIAL

MAUSAM & ESCAPE
Choreographed by Olivia Cipriani
Music by A.R. Rahman
Olivia Cipriani, Lily Herout and Avery Novitch

PAS DE DEUX
Choreographed by Giorgia Comeau
Song by Imagine Dragons
Giorgia Comeau and Jeremy Sagaille

PROTOTYPE
Choreographed and danced by Isabel Camacho and Nahian Jahangir
Music by Childish Gambino and Disclosure featuring Sam Smith

STUDENT DANCE CLUBS
TERRA DANCE
Choreographed by Emily Su
 Ribbon Fantasy
Marian Chee, Bin Chen, Christina Dykas, Rosie Lima, Brenda Lin, Emily Su and Tenzin Youdon

UNION DANCE TEAM
Captains: Ella Fertitta and Marisa Lieberman
Song by Ella Eyre
Alicia Barber, Anna Byrne, Jillian Callanan, Sydney Conner, Mikayla Howie, Grace Kernohan, Marisa Lieberman, Julie Nlejadlik, Laura Schad, Allison Smith, Maddison Stemple-Piatt, Megan Wells and Fadeelah Ziyad-Islam

BALLROOM
Choreographed by Amber Woerner
Swings Kids
Song by Elvis Presley
Joshua Chin, Alexander Chu, Lailee Cummings, Shanon Douglas, Samantha Griffiths, Alexander Harley, Carson Miller, Peter Miralles, Joni-Rae Patridge, Aileen Shaughnessy and Marisa VanBrankle

HIP-HOP CLUB & U-BREAK
Choreographed by Emily Lewis, Giorgia Comeau and Alvin Andino
Songs by The Weekend, T-pain and Nicki Minaj
Alvin Andino, Navjot Batra, Isabel Camacho, Giovana Coelho, Giorgia Comeau, Haley Erskine, Stephan Grant, Nahian Jahangir, Grace Kernohan, Emily Lenza, Emily Lewis, Dari Liu, Mayte Martinez, Darlene Pedines, Elena Pettiford, Anthony Pham, J’Kela Smith, Maddison Stemple-Piatt, David Thai, Shanice Wilson and Fadeelah Ziyad-Islam

BHANGRA UNION
Shannon Douglas, President

FOR THIS PERFORMANCE, WE WOULD LIKE TO THANK:
William E. (Class of 1879) and Anna S. Lothridge Fund
Charles D. Lothridge ’44 / Edward Villella Fellowship
Joan Gould Scholarships
Robert Bovard / Technical Director
Brittney Belz / Theater and Dance Costume Designer
Ryota Matsue / Photographer-Filmmaker
Brianna Caruccio / Dance Program Work-study
Kathie Herrington and Linda Goodman / Arts Administrators
STEINMETZ CONCERT 2015

FRIDAY, MAY 8  ||  8 P.M.  || MEMORIAL CHAPEL

Directed by: John Cox

PROGRAM

ETZ CHAIM
(THREE TREE OF LIFE)
Matthew Anisfeld (b. 1991)

NO COLOR IS LEFT
Teena Alex (b. 1993)

HEROIDES
Max Caplan (b. 1994)

SYMPHONIC DANCES
Edward Grieg (1843-1907)
I. Allegro moderato e marcato
II. Allegro grazioso
IV. Andante—Allegro molto e risoluto

PIANO CONCERTO
IN A MINOR, OP. 16
Edward Grieg (1843-1907)

STEINMETZ CONCERTO
COMPETITION WINNER
Max Caplan ’16

Directed by: John Cox

STEINMETZ CONCERT 2015

Directed by: John Cox

UNION COLLEGE AND
COMMUNITY ORCHESTRA

VIOLIN I
Heather Chan, concertmaster
Bob Brannon
Barbara Brothers
Ann K. Seidman
Cheryl Szczechkowski
Virginia Traver
David Wilkinson

VIOLIN II
Carol Blom*
Amy Clodgo
Tiyan Epperson
Virginia Gordon
Francis Kailey
Bijan Moore
Diana Temple
Sabrina Yu

VIOLA
Erkan Bertram*
Karl Brosch
Louise Dickinson
Peggy Gerardi
Edith Kliman

CELLO
Brittany Rakoske*
Luke Dyer
Schuyler Stockman
Karen Brooks

BASS
Andrew Tysoe
Ethan Watson

PICCOLO
Isabella Osbourne

FLUTE
Warren Thompson*
Isabella Osbourne

CLARINET
Mitsuki Fukuda*
Carolyn Doty
Elise Farrington
Emily Jannery
Natalie Ciesielska

BASSOON
Jenni Fullam
Christina DeStefano

HORN
Gus Birkhead*
Josef Schmee
Charlie Thompson
Karolin Bueker

TRUMPET
Andrew Forte*
Rory Bennett

TROMBONE
Stephen Hoeprich*
Kaelan Hansson

PERCUSSION
Tom Coward
Drew Ivarson

Erkan Bertram and Francis Kailey, Student assistants

UNION COLLEGE CHORALE

SOPRANO
Melissa Brauner
Nancy Guo
Chujun Li
Morgan Muggia
Yoreli Rodriguez
Yawen Yang
Agnes Park
Suan Quan
Cara Peterhansel
Emily Lenza

ALTO
Cassie Call
Elyse Clark
Kyra Detone
Julia Hotz
Anna Ko
Rachael Powders
Teena Alex
Karolin Bueker
Kim Plofker
Lily Steinberg
ZeYing Qi

TENOR
Matthew Anisfeld
Kaelan Hansson
Drew Ivarson
Herbert Wilson
Terry Tucker
Ryan Muther

BASS
William Garner
Matthew Hacker
Stephen Hoeprich
Julian Jocque
Kyle Miller
Warren Thompson

*DENOTES PRINCIPAL
MUSIC

SATURDAY, MAY 9 || 2 P.M. || FRED L. EMERSON FOUNDATION AUDITORIUM, TAYLOR MUSIC CENTER

Directed by: Timothy Olsen

PROGRAM CHosen FROM:

BLACK COW
Walter Becker/Donald Fagen

DRONE ON
Max Caplan '16

GRAND CENTRAL SUITE
Bill Holcombe

HONEYSUCKLE ROSE
Fats Waller/Andy Razaf

JAMES
Pat Metheny/Lyle Mays

NOCHE AZUL
Tim Olsen

NORWEGIAN WOOD
John Lennon/Paul McCartney

SO MUCH (FOR STANDARDS)
Warren Thompson '15

UNION COLLEGE JAZZ ENSEMBLE

SAXOPHONE
Patrick Cowden
Samantha Griffiths
Anthony Karamourtopoulos
Philip Kretscher
Shauna LeFebvre
Jess Sanford
Nate Sears
Warren Thompson
Adam Weisse

TRUMPET
Rory Bennett
Jared Diou-Cass
Sonja Hansson
Will Stearns

TROMBONE
Austin Andersen
Kaelan Hansson
Stephen Hoeprich
Jeancarlo Sotomayor

VIOLA
Colby Richardson

PIANO
Max Caplan

GUITAR
Kabir Chabra
James Triola
Ari Weinstein

BASS
Ethan Watson

DRUMSET/PERCUSSION
Wm. Walker Barnes
Ian Mowers
Sam Walsh

VOCALS
Adam Weisse
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 the General Electric Company, he was widely regarded as America’s leading electrical engineer.

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 German government. He then 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 GE in 1892 and relocated to Schenectady.

Among his many other contributions to electrical engineering, Steinmetz also fostered the development of alternating current, which made possible the expansion of the nation’s electric power industry. 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 for the rest of his life. A superior 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.

Hands-on, faculty-mentored undergraduate research is at the heart of a Union education. Liberal arts colleges draw students who are restless to learn. Union students are also restless to do. They transform their learning, ingenuity and personal discoveries into meaningful contributions.

Working closely with their professors in every academic department—in classrooms, labs, studios, archives and in the field—Union students delve into topics that inspire and challenge them intellectually and creatively. Each spring, our students share their academic interests and talents with peers, parents and professors at the campuswide Steinmetz Symposium. Held yearly since 1991, the symposium features an extensive array of oral presentations, posters, performances and exhibits, with concurrent sessions held all day in lieu of regularly scheduled classes. It is an integral part of Union’s Recognition Weekend, which includes Prize Day, a tribute to student achievement in all fields. As we commemorate the symposium’s anniversary, we also celebrate a culture of personal discovery that, for 25 years, has brought together coursework, faculty mentorship and teamwork to deepen our students’ understanding of self and subject.

Charles Proteus Steinmetz
ELECTRICAL ENGINEER, EDUCATOR, INVENTOR

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