

THE CHARLES PROTEUS  
**STEINMETZ** SYMPOSIUM



**May 8, 2015**



**UNION**  
COLLEGE  
FOUNDED 1795

# UNDERGRADUATE RESEARCH AT UNION

## A TRADITION AND A CELEBRATION

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



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

# SCHEDULE OF EVENTS

## FRIDAY, MAY 8: STEINMETZ SYMPOSIUM

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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.

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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.

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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.

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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

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8 P.M.

THE UNION COLLEGE AND COMMUNITY ORCHESTRA AND CHORALE  
MEMORIAL CHAPEL

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## SATURDAY, MAY 9: PRIZE DAY

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11 A.M. – 12:30 P.M.

PRESENTATION OF PRIZES AND RECOGNITION | MEMORIAL CHAPEL

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12:30 P.M. – 1:30 P.M.

PRIZE DAY RECEPTION | REAMER CAMPUS CENTER PATIO

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2 P.M.

JAZZ ENSEMBLE | EMERSON AUDITORIUM, TAYLOR MUSIC CENTER

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STEINMETZ CONCERT 8 P.M.		<b>30</b>
UNION COLLEGE JAZZ ENSEMBLE SATURDAY AT 2 P.M.		<b>31</b>

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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.

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**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

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**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.

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**SCHAFFER LIBRARY WILL BE OPEN:**

Friday, 8 a.m. – midnight  
Saturday, 10 a.m. – 2 p.m.  
Sunday, 10 a.m. – 2 p.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 2015



9 A.M. – 5 P.M. || BURNS ARTS ATRIUM GALLERY, VISUAL ARTS BUILDING

**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  
Rachel Andreama  
Nelligan Boff  
Allison Borek  
McKenzie Brandon  
Paige Brown  
Frank Chiarulli  
Katherine Cuozzo  
Rose Dumbrigue  
Abigail Golodik  
Haley Gould

Aarifa Gowani  
Kristofer Hammer  
Sonja Hansson  
John Hathaway  
Mark Hilbert  
Emily Hiller  
Rachael Hunt  
Ruoxuan Jia  
Chelsea Kaiser  
Haicheng Lin  
Greg Loring

Michal Majer  
Kiana Miller  
Kara Modliszewski  
Taiana Ospina  
Alexa Passer  
Yi Ting Paung  
Mike Presendieu  
Amy Provost  
Valerie Purcell  
Yujuan Qiu  
Zachary Restifo

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



# SESSION I

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

## KARP 001

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### 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

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### 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

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### 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

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### CHEMISTRY I

**MODERATOR: JOANNE KEHLBECK**

**9 A.M. | CHRISTINA BEBERNITZ**

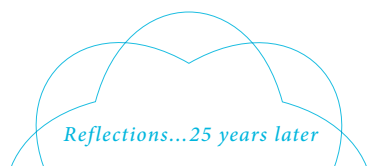
Identification and Synthesis of *D. athabasca* Cuticular Pheromones

**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

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### CLASSICS I

**MODERATOR: SARA WATKINS**

**9 A.M. | JULIE WARREN**

An Experiment in Gendered 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

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### 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 DIORIO**

Rendering Realistic Lens Flares Using Monte Carlo Methods

## HENLE DANCE PAVILION

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### 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

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### 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 BATTA**

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

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### 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

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### 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

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### 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 Diabls 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

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### 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. | KAELAN 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

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### 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

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### 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

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### 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

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### 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

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### 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

### LIPPMAN 101

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### 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

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### 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

**9:20 A.M. | MARYKATE FARBER**

The Art Looting Investigation Unit: Finding Their Place in World War II History

**9:40 A.M. | JOSEPH HINDERSTEIN**

The Anti-Nazi Boycott: A Symbolic Resistance

## BAILEY 207

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### 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

**10 A.M. | ELISABETH DEVINE**

The Effects of Mindful Journaling on Sense of Well-Being

## BAILEY 100

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### 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

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### 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

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### 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**

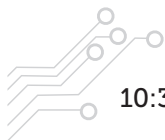
Limits to Social Capital: How Do Communities Differ from One Another in Recovery Processes?

**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

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#### 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

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#### 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 MCGILLICUDDY**

Religion: A Concrete or Abstract Response to Mortality Reminders

### KARP 005

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#### 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

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#### 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 KRETSCHMER**

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

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#### 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 CHAKOTE**

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

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#### 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

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#### 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

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#### 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

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#### FILM FESTIVAL

**MODERATOR: JAMES DE SÈVE, ANDREW FEFFER**

**10:30 A.M. | BENJAMIN FORMAN**

Enviro-Cinematics

**10:50 A.M. | MOLLIE GILCHRIST**

Baikal Breathes

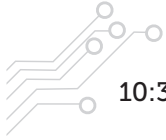
**11:30 A.M. | KEWAN HARRISON, JOSEPH LAUB**

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

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#### 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

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#### 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

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#### 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

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#### MECHANICAL ENGINEERING

**MODERATOR: GLENN SANDERS**

**10:30 A.M. | TENZIN YOUNDON**

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 LAPOINTE**

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

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#### 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

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#### 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

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#### 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 DIORIO**

Developing a Parametric Downconversion Apparatus for Single-Photon Experiments in Quantum Optics

### LIPPMAN 101

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#### 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

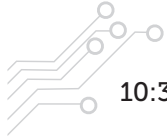
**11:50 A.M. | KARL HETZKE**

Understanding the Islamist Constituency—A Case Study in Turkey





## SESSION II



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

### LIPPMAN 201

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#### 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

**11:50 A.M. | STEFAN BASILE**

Operation Failure: The Results of United States Covert Operation in Guatemala

### KARP 008

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#### POLITICS AND DISASTER

**MODERATOR: ANDREW MORRIS**

**10:30 A.M. | TIMOTHY HOBART**

A Social Analysis of Discrimination in Red Cross Relief following Hurricane Camille

**10:50 A.M. | MAXWELL UNTERHALTER**

Climate Change and Disaster: How Different States along the Eastern Seaboard have Prepared for Sea-level Rise and Hurricanes

**11:10 A.M. | TIMOTHY HOBART**

Controlling Hunger and Disease during Famine: the Failures of the British and the Expansion of Governmental Power

### BAILEY 207

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#### 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

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#### 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 DWORKIN**

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

### **MADLINE 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

#### KRISTY LANDRE

The Effects of Mood State on Risky Decision-Making

#### KATE KOZAIN

Message Framing and Ad Evaluation: The Role of Self-Monitoring

#### CHLOE BARTLETT

Working Memory and Capacity of Artists and Non-Artists

#### SHANNA SHI

Attention and Bilingualism

#### DANIEL SCHWARTZ

Qualities of an Ideal Coach

#### ELANA GLICKMAN

The Color of Meaning

#### AMY FISHER

China: Authoritarianism, Legitimacy and Happiness

#### KEVIN BENTIVEGNA

Post and Get Disciplined? How College Athletes Are Using Social Media Today

#### NOEMIE BECHU

The Relationship between Exercise Habits, Athletic Status and Resisting Ego-Depletion

#### VICTORIA MAROTTA

The Role of Regulatory Focus in Predicting Athletic Positioning and Performance

#### CAROLINE BRUSTOWICZ

The Process and Creation of 3D Printed Fashion4Freedom Shoes

#### CAROLINE BRUSTOWICZ

Exploring the Juxtaposition between Nature and Technology with 3D Printing

#### LAURA MUELLER

Sexual Assault Prevention at Union College

#### ELIZABETH MAGAS

Twelve: Costumes from Design to Performance

#### MAX ROEHMHOLDT

Euthanasia and Human Experimentation in Nazi-Germany with an Ethical Analysis of the Human Experiments

#### JULIE NIEJADLIK

The True Cost of Educating English Language Learners

#### MEGHAN KEEGAN

Lucille Ball: An American Feminist and Actress

#### TAYLOR GORMAN

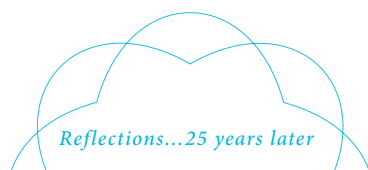
Imperial Women of the Roman Empire and Greek Goddesses: A Dominance that Makes Women of the Two Realms Similar

#### VICTOR MURPHY JR.

The Missing Link: The Lack of Black History Taught in Boston Public High Schools

#### PAIGE BROWN

Faces of Union



*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 MENESES

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

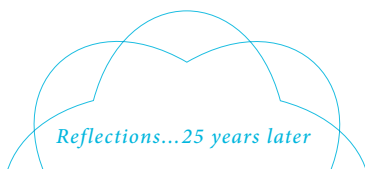
IAN DAVIES

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.



"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 LASSITER AND FORRESTER ROSS

Jinan, China

#### DAVID MASTERSON

Bagru, India

#### SAMANTHA 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

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#### 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

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#### 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

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#### BIOLOGY II

**MODERATOR: BRIAN COHEN**

**2 P.M. | ALLYSON 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

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#### 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

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#### 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

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#### 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

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#### 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

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#### 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

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#### 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

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#### 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

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#### 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

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#### 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

**2:40 P.M. | ALEXANDER CAVERT**

Copper Oxide Nanomaterials for Water Treatment

**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

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#### 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

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#### 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

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#### 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

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#### 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

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### 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**

Losing Yourself on the Streets: Being Homeless in Pittsfield, Mass.

**4:10 P.M. | OLIVIA POWERS**

Ripples of Good Intentions; the Shift from Development to Corporate Social Responsibility

## WOLD 128

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### 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

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### 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

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### 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



## SESSION V

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

### KARP 200

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#### 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

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#### 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

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#### 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

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#### HISTORY III

**MODERATOR: STEVEN SARGENT**

**3:30 P.M. | JULIA SHIVELY**

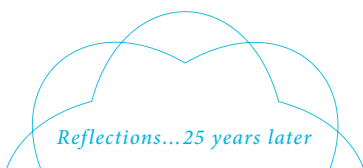
Who Took What: Soviet Spies in America throughout the Twentieth Century

**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

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#### 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

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#### 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

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#### 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

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#### 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

## 4:30 P.M. | HENRY SCHERCK

Analyzing Hometown Identification: A Study of New Scotland, N.Y.

## 4:50 P.M. | HANNAH GARDELLA

One Drug, Many Names, No Solutions: The MDMA Epidemic and Drug Policy in the United States

## LIPPMAN 201

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### 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

Combatting Cultures of Impunity after Insurgent Violence: Case Studies on Nepal, Sri Lanka and Peru

## BAILEY 100

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### 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?

## LIPPMAN 014

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### 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

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### 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





# 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 McKean

### 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 Niejadlik, 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, Dani 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 (THE 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)

- III. Allegro moderato molto e marcato—Quasi presto—Andante maestoso

### STEINMETZ CONCERTO COMPETITION WINNER

Max Caplan '16

Erkan Bertram and Francis Kailey,  
*Student assistants*

## UNION COLLEGE AND COMMUNITY ORCHESTRA

### VIOLIN I

Heather Chan,  
*concertmaster*  
Bob Brannon  
Barbara Brothers  
Ann K. Seidman  
Cheryl Szczepkowski  
Virginia Traver  
David Wilkinson

### VIOLIN II

Carol Blom\*  
Amy Clodgo  
Tiyana 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  
Ralph Thomas

### OBOE

Diane Baltazar  
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

## 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 Powers  
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

# 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 Kretschmer  
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 Hoeplich  
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



NOTES



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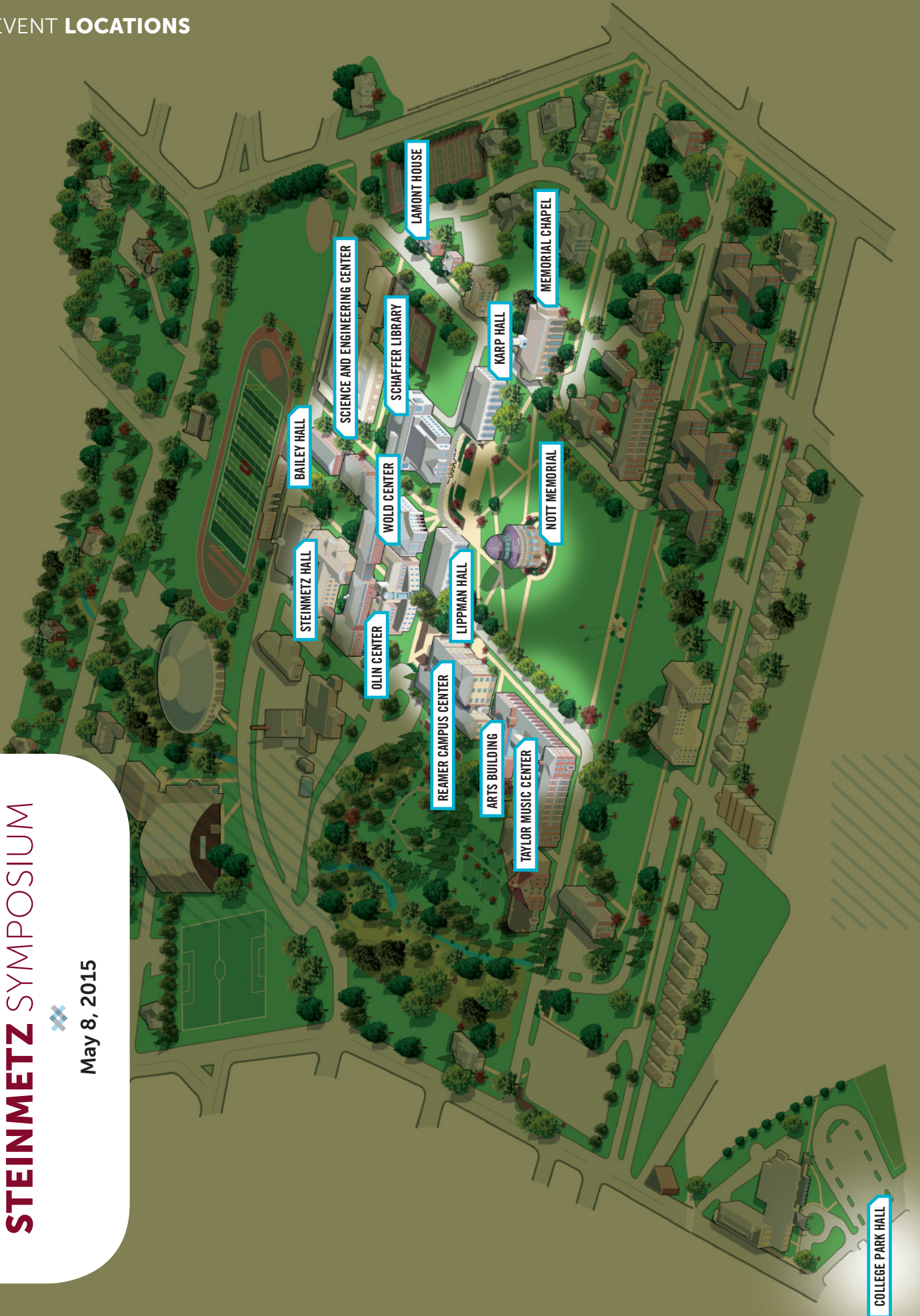


EVENT LOCATIONS

THE CHARLES PROTEUS  
**STEINMETZ SYMPOSIUM**



May 8, 2015



COLLEGE PARK HALL

UNION COLLEGE 807 UNION STREET, SCHENECTADY, NY 12308

UNION  
COLLEGE  
FOUNDED 1795