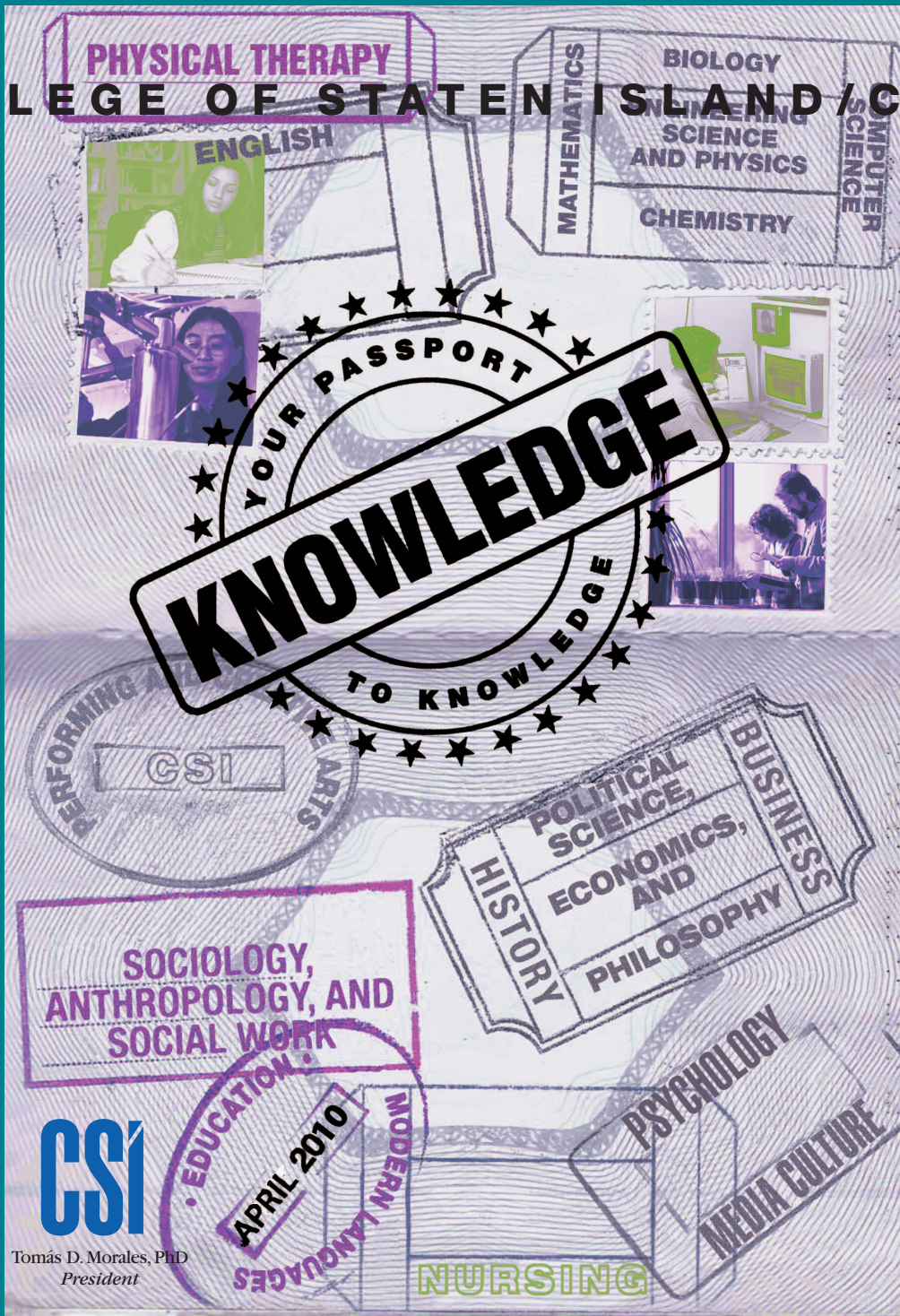


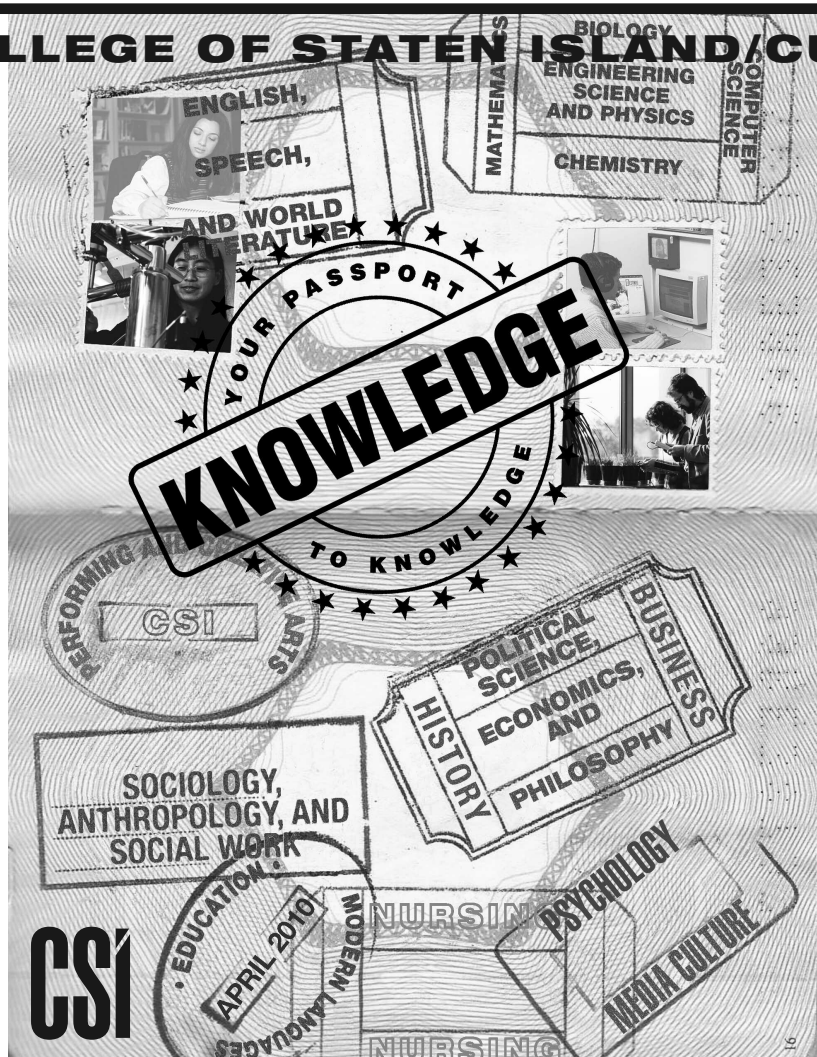
COLLEGE OF STATE NEW YORK



CSI UNDERGRADUATE CONFERENCE ON RESEARCH, SCHOLARSHIP, AND PERFORMANCE

THURSDAY, APRIL 22, 2010

COLLEGE OF STATEN ISLAND/CUNY



CSI UNDERGRADUATE CONFERENCE ON RESEARCH, SCHOLARSHIP, AND PERFORMANCE*

April 22, 2010

Center for the Arts, 1P-Atrium

1:30pm - 4:00pm

*Sponsored by the Division of Academic Affairs with funding from
the CSI Student Government Academic and Curricular Affairs Commissions,
Alumni Relations, and the CSI Foundation

Conference Schedule

Conference Schedule

Noon to 1:30 pm	Authors and Mentors Lunch
12:30pm - 1:25 pm	CSI Rock Club Williamson Theatre
1:30 pm	Opening Remarks by President Morales 1P-Atrium
1:30pm - 4:00pm	Poster Presentations 1P-Atrium
1:35pm - 2:15pm	CSI Music Program Recital The Recital Hall
1:45pm - 2:30pm	CSI Dance Program The Training of a Dancer Dance Studio, 1P-220
2:30pm - 3:30pm	Student Spring Group Exhibition CSI Student Art Gallery, 1P-118B
2:45pm - 3:30pm	CSI Big Band, CSI Jazz Quartet, and CSI Jazz Combo Williamson Theatre



CSI Undergraduate Conference on Research, Scholarship, and Performance

Message from the President

It is my pleasure to welcome you to the 9th Annual Undergraduate Conference on Research, Scholarship, and Performance.

The work presented by our students under the conference theme of “Your Passport to Knowledge,” certainly personifies the CSI tag-line *World Class, Right Here!* These projects represent a depth and breadth of work rarely seen among undergraduates. This conference highlights the intellect and talent of CSI students, as well as the commitment of our faculty to provide a world-class education for our students. It is through the guidance of and the collaboration with CSI faculty that our students are able to produce research, scholarship and performance of the outstanding caliber that you will enjoy today.

This year we have 203 participants in the conference representing an extensive range of disciplines within the College. There are 70 abstracts being presented either by a single student or groups of students; 41 performers, and 62 students displaying their art. Today, you will have the opportunity to immerse yourself in complex musical performances, dance performances; rigorous analyses of social scientific and literary ideas and theories; and observe meticulous scientific investigations and inquires.

This year an additional dimension has been added to the conference- an alumni component. Our 2010 conference publication showcases conference alumni with updates on their current pursuits and accomplishments. This is surely inspirational for all current and future conference participants.

I would like to acknowledge our Library faculty and staff, and Dr. Alan Benimoff - all have again assisted our student participants by providing workshops and technical assistance that enabled them to enhance the visual components of their presentations. And, I would like to thank Associate Provost Susan Holak for her wonderful coordination of the conference.

It is important to note that 19 of our students’ research projects were supported through CSI Undergraduate Research Awards sponsored by the CSI Foundation. In addition, we are extremely grateful to the CSI Student Government, Academic and Curricular Affairs Commission, for their financial support. There are two others I would like to thank: the Alumni Association for donating volunteer tee shirts; the Center for the Arts for their technical support and for tuning of the piano.

I am indeed proud that this conference represents a true collaboration of the College community and I appreciate the many roles played by all in presenting this conference highlighting the critical research and experimentation which define the college experience.

Congratulations to each and every one of today’s participants!

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Morales', written over a light blue grid background.

Tomás D. Morales, PhD
President

The Department of Performing and Creative Arts

Presents

An Art, Dance, and Music Exposition

at

The Ninth Annual
CSI Undergraduate Conference
on Research, Scholarship,
and Performance

The Recital Hall,
The Williamson Theatre,
The Dance Studio, and the
Student Art Gallery
Center for the Arts

WILLIAMSON THEATRE

CSI ROCK MUSIC CLUB & NOT FROM CONCENTRATE

12:30pm—1:25pm

An eclectic assortment of Rock standards and original improvisations

The CSI Rock Club

Dominick Tancredi, *Faculty Advisor*

PROGRAM TO INCLUDE

MAN IN THE BOXALICE IN CHAINS
NO RAIN.....BLIND MELON
SAY IT AIN'T SO.....WEEZER
DINOSAURS WILL DIENOFX
WHAT HAPPENED TO YOU?.....THE OFFSPRING
PINBALL WIZARDTHE WHO

Alan Aurelia - electric bass	Jenna Calderon - guitar
Patrick Granton - guitar	Joseph Giunto - drums
Margaret Hampton - vocals	

Not From Concentrate

William Bauer, *Faculty Advisor*

PROGRAM TO INCLUDE

ADOPT A NEW OUTLOOK
IN A HAZE
SWEET
THE BREAKDOWN
THANK YOU AND GOODNIGHT

All songs written by *Not From Concentrate*

Alan Aurelia - bass	Jenna Calderon - guitar
James Fletcher - saxophone	Miles James - trombone
Joseph Giunto - drums	Margaret Hampton - vocals

THE RECITAL HALL 1P-120

CSI MUSIC PROGRAM RECITAL

1:35pm–2:15pm

A showcase of chamber music featuring faculty and students from the CSI Music Program

William Bauer, *Performance Coordinator*

PROGRAM

FRAUENLIEBE UND LEBEN, OP. 42.....ROBERT SCHUMANN (1810-1849)

1. SEIT ICH IHN GESEHEN
2. ER, DER HERRLICHSTE VON ALLEN
3. ICH KANN'S NICHT FASSEN, NICHT GLAUBEN
4. DU RING AN MEINEM FINGER

AMANDA SIUZDAK, SOPRANO PROF. SYLVIA KAHAN, PIANO

QUARTET FOR GUITARS.....DANIEL MUCCIO (1986)

(WORLD PREMIERE)

II. ALLEGRETTO

IV. ALLEGRO

JENNA CALDERONE, PATRICK GRANTON, DANIEL MUCCIO, ALFRED DEROSA, GUITARS

CANTABILE.....NICOLÒ PAGANINI'S (1782-1840)

STEPHANIE GERACI, VIOLIN JENNA CALDERONE, GUITAR ALAN AURELIA, DOUBLE BASS

PER LA GLORIA D'ADORARVIGIOVANNI BATTIST BONONCINI (1672-1750)

NELLGABRIEL URBAIN FAURÉ (1845-1924)

LASCIA CH'IO PIANGAGEORGE FRIDERIC HANDEL (1685-1759)

HARK! THE ECHOING AIR.....HENRY PURCELL (1659-1695)

MASAFUMI TOYODA, COUNTERTENOR PROF. SYLVIA KAHAN, PIANO

CSI DANCE PROGRAM

CSI MUSIC PROGRAM RECITAL

1:45pm–2:30pm

The Training of a Dancer

A lecture/demonstration focusing on dance curriculum including excerpts from the upcoming Spring Dance Recital featuring students of the CSI Dance Program.

Niambi Keyes, *Dance Instructor*

Charles Thomas, *Dance Coordinator*

BALLET (Dan 231)

Barre, Centre/ Floor Work

Excerpts from Spring 2010 Concert

IMPROVISATION (Dan 171)

Audience Participation

CHOREOGRAPHY (Dan 111)

Presentation: "Foot Prints In the Sand"

Choreographed by students of Dan 111

Dance Students: Stephanie Layne, Audra Morales-Cheng, Tamara St. Prix, Lauren Stevens, Justina McGhie, Phoebe Arriesgado, Kaitlyn Cantoni, Rose Picarello, Genevieve O'Brien, Donnica Hamlet, Kassinda Charles, Danielle Pranio, Deanna Cobb, Katelyn Cermenello

THE CSI STUDENT ART GALLERY 1P-118B**THE STUDENT SPRING GROUP EXHIBITION**

2:30pm—3:30pm, Reception

The Student Art Gallery of the Performing and Creative Arts Department will present an exhibition of work by art majors from all of the areas of study: drawing, painting, photography, printmaking, and sculpture. The exhibition is curated by Iman Ayeesha-Platt, Deryn Cro, Misste Rivera, and Kiera Rommel whose participation is representative of each of the 3 main branches of the art major: photography, studio art, and art history.

Siona Wilson, *Faculty Advisor*

NAMES OF STUDENTS WHO HAVE WORK IN THE ART/PHOTOGRAPHY SHOW

Misste Rivera	Lynnanne O'Conner	Rolo
Lucy Farfan-Narcesse	Hyatt Tahmaz	Tracy Katz
Angelica Popolano	Angeline Millaj	Katherine Cheng
Hang Yo Kwong	Caryl Herzfeld	Tiffany Bari
Roberta Berman	Denise Buchan	Izzy Greenspan
Ken Jobin	Melissa Ciaravino	Nancy Perricone
Lillian Werner	Andrew Batres	Wehmar Marks
Darlene Livingston	Krystal Mena	Elizabeth Stassi
Daniela Hernandez	Iman-Ayeesha Platt	Marissa Mule
Christina Bogart	Elizabeth Boston	Flor Munoz
Jovan Santopietro	Amanda Davis	Sara Sharif
Caitlin Santomauro	Veronica Padilla	James Vaccaro
Samantha Benart	Stefanie Candelario	Carissa Pignatelli
Jenna Zicheltella	Suzie Goldstein	Alison Babwah
Eithne B. McGowan	Demian Keller	Ben Lella
Angela DiCostanzo	Michelle Volpe	Michael Thorton
K. Senya	E. Goeoel	Alex Zusita
Briana Piccolo	Christina Carannante	Samantha Benoit
Melissa Dudley	David DiLillo	Nick Piazza
Aliaa Youssef	Harvey Chin	
Margaret Ricciardi	Francisco Osorio	
Suzie	Megan Walsh	

WILLIAMSON THEATRE**CSI BIG BAND, CSI JAZZ QUARTET and CSI JAZZ COMBO**

2:45pm—3:30pm

The CSI Big Band explores literature of that genre ranging from swing to modern with an emphasis on clarity with ensemble performance and development of each player's overall musicianship. The Jazz Quartet explores advanced literature and jazz classics ranging from the early modernism of Dizzy Gillespie and Charlie Parker to later styles of contemporary composers. The Jazz Combo, our newest ensemble, takes a keen interest in development of improvisational and accompaniment skills in the jazz idiom, particularly relating to small ensemble performance.

Michael Morreale, *Director**The CSI Big Band*

James Fletcher, Michael Simanovsky, Danny Lazkani - saxophones
Rafael Calderon, Frank Rogers - trumpet
Thomas Copley, Miles James, Jeffery Martin - trombone
Margaret Hampton - voice
Jenna Calderon, Anthony Gonzalez, David Stagno - guitar
Albert Derosa, Vincent Sottile - piano
Matthew Gallo, John Demaio - bass
Joseph Giunto, Michael Sassi - drum

The CSI Jazz Quartet

Rafael Calderon - trumpet Alan Aurelia - contrabass
Paul Buschmann - drums Michael Morreale - piano

The CSI Jazz Combo

James Fletcher - tenor saxophone Anthony Gonzalez - guitar,
Thomas Izzo - electric bass Michael Sassi - drums Paul Buschmann - drums

PROGRAM TO BE ANNOUNCED

PCA EVENTS CALENDAR, SPRING 2010

April 22, 23, 24 at 8:00pm, Lab Theatre

DRAMA PRODUCTION: ***A Midsummer Night's Dream*** by William Shakespeare
directed by Professor Lee Papa

Tickets: \$10/5 students and seniors Call 718-982-ARTS for tickets

Wednesday, April 28, 7:30pm, Recital Hall

SENIOR RECITAL: **Masafumi Toyoda**, countertenor

Admission: free

Thursday, April 29, 1:30pm, Recital Hall, 1P-120

MUSIC HOUR: **The OMNI Ensemble**

Admission: free

Thursday, April 29, 7:30pm, Williamson Theatre

Spring Dance Recital

directed by Charles Thomas and Niambi Keyes

Tickets: \$10/\$7 students and seniors

April 29 – May 27, PCA Student Art Gallery, 1P-118B

2010 Graduation Exhibition

An exhibition of art made by the graduates of the Art and Art/Photography Programs

Please call 718-982-2118 for gallery hours

Wednesday, May 5, 7:30pm, Recital Hall

SENIOR RECITAL: **Daniel Muccio**, guitarist/composer

Admission: free

Tuesday, May 11, 7:30pm, Recital Hall, 1P-120

Spring Recital by the Young Artists of the CSI Music Program

Tickets: \$5

Wednesday, May 12, 2:30pm, Recital Hall, 1P-120

RECITAL: **The CSI Chorus**, directed by Marina Alexander

Tickets: \$5

Wednesday, May 12, 7:30pm, Lab Theatre, 1P-110

RECITAL: **The CSI Jazz Ensemble**, directed by Michael Morreale

Tickets: \$5

Thursday, May 13, 7:30pm, Recital Hall, 1P-120

RECITAL: **The CSI Guitar Ensemble**, directed by Edward Brown

Tickets: \$5

All performances take place in the Center for the Arts, College of Staten Island

For information, please call 718.982.2520 or 718.982.ARTS

All performance events are CLUE-certified

Research Poster Presentations

Center for the Arts

Atrium

1:30pm - 4:00pm

Poster 1

FDIC Insured

Qimei Luo

Faculty Mentor: Professor Michael Mandiberg

Department of Media Culture

Poster 2

Do Part-Whole Relations Produce Facilitation in Lexical Access?

Catherine Roca, Kevin Sailor, Urooj Syed, and Paloma Wasserstein

Faculty Mentor: Dr. Patricia Brooks

Department of Psychology

Poster 3

A Probability Model for Wireless Sensor Networks

Janeth Toro

Faculty Mentor: Dr. Zhanyang Zhang

Department of Computer Science

Poster 4

Gaining Insight into New York's Climatic Future By Analyzing Climate Trends of Its Past

Brian Kateman, Gayathri Sudarsanan, Jenna Calderon, Mallory Goe, and Jonathan Rossi

Faculty Mentor: Dr. Athanasios Koutavas

Department of Engineering Science and Physics

Poster 5

QRS Complex Detector Implementing Orthonormal Functions

Leo Lei

Faculty Mentor: Dr. Natacha Gueorguieva

Department of Computer Science

Poster 6

Data Query Analysis and Optimization for Wireless Sensor Networks

Gayathri Sudarsanan

Faculty Mentor: Dr. Zhanyang Zhang

Department of Computer Science

Poster 7

A Morphological Study of Compact Narrow Emission Line Galaxies in the COSMOS Field

Daniel Feldman, Vivienne Baldassare,

Alexandra Greenbaum, Imran Hasan, and

Stephanie Mahalchick

Faculty Mentor: Dr. Charles Liu

Department of Engineering Science and Physics

Poster 8

Applying Lattice Reduction to Knapsack Cryptosystems

Jonathan Maltz

Faculty Mentor: Dr. Kevin O'Bryant

Department of Mathematics

Poster 9

The Louis Armstrong Symposium

Linda Soria and Ziv Karmi

Faculty Mentor: Dr. William Bauer

Department of Performing and Creative Arts

Poster 10

An Easter Cantata

Chris Spinelli

Faculty Mentor: Dr. William Bauer

Department of Performing and Creative Arts

Poster 11

The Music SILOH Project

Ziv Karmi

Faculty Mentor: Dr. William Bauer

Department of Performing and Creative Arts

Poster 12

Individual Differences in Speech Perception and Language Learning

Rosemarie Marronaro

Faculty Mentor: Dr. Patricia Brooks

Department of Psychology

Poster 13

Kantian Concepts in the Works from the Generacion de 1898

Victoria Cooper

Faculty Mentor: Dr. Nuria Morgado

Department of Modern Languages

Poster 14

Gender and Displacement in Georgia

Stephanie Helewa

Faculty Mentor: Dr. Peter Kabachnik

Department of Political Science, Economics, and Philosophy

Poster 15

Comparative Analysis: Attachment Patterns and Bases of Self-Worth in Males and Females of Intact and Non-intact Families

Victoria Porcell

Faculty Mentor: Dr. Florette Cohen

Department of Psychology

Poster 16

The Effects of Mortality Salience on Self-Perceived Resiliency

Esther Kabalkin

Faculty Mentor: Dr. Florette Cohen

Department of Psychology

Poster 17

Experiments of Herding Attack on Iterative Hash Functions

Dan Hoizner and Vladislav Klym

Faculty Mentor: Dr. Xiaowen Zhang

Department of Computer Science

Poster 18

The Contribution of Spinal and Supraspinal Loci to Opioid-Induced Hyperalgesia

Megan Caldwell

Faculty Mentor: Dr. Benjamin Kest

Department of Psychology

Poster 19

Development and Testing of Curcumin Derivatives as Promising Drugs Against Breast Cancer

Ashley Mathai

Faculty Mentor: Dr. Jimmie Fata

Department of Biology

Poster 20

Pairing Cognitive and Personality Factors for Prediction Academic Performance

Keith Miller

Faculty Mentor: Dr. Florette Cohen

Department of Psychology

Poster 21

Mickey, Marvel, and Memories: Exploring the Role of Nostalgia in Consumer Response to Disney

Lauren LoPrimo

Faculty Mentor: Dr. Susan Holak

Office of Academic Affairs and Department of Business

Poster 22

Infants' Locomotor Expertise Changes Body Awareness

Pawan Kaur and Seray Taysin

Faculty Mentor: Dr. Sara Berger

Department of Psychology

Poster 23

Effects of Phonological Cues in Lexical Access

Paloma Wasserstein, Catherine Roca, Urooj Syed, and Diana Almodovar

Faculty Mentor: Dr. Patricia Brooks

Department of Psychology

Poster 24

The Role of Locomotor Expertise on Limb Preference

Marierose Polis

Faculty Mentor: Dr. Sarah Berger

Department of Psychology

Poster 25

Chinese Industrialization and American Portrayal

Dwight Dunkley

Faculty Mentor: Dr. Ming Xia

Department of Political Science, Economics, and Philosophy

Poster 26

The Influence of Perceived Race and Gender Presentation on the Sentencing of Female Juvenile Offender

Carene Hadad

Faculty Mentor: Dr. Kathleen Cumiskey

Department of Psychology

Poster 27

Demonstrating Urbi Using the AIBO Robotic Dog

Vitaly Nirenberg and Justin Allen

Faculty Mentor: Dr. Susan Imberman

Department of Computer Science

Poster 28

Development of New Pd-Catalyzed Tandem Reactions for Organic Synthesis

Qixin Liu, Amy He, Matthew Isreal, and Yuan-Xi Liao

Faculty Mentor: Dr. Qiao- Sheng Hu

Department of Chemistry

Poster 29

Biosynthesis of Truncated Ste2p; A GPCR from Yeast that may be Suitable for Crystallization

Grigoriy Gelfand

Faculty Mentor: Dr. Fred Naider

Department of Chemistry

Poster 30

Effect of Phosphor Tau Expression in Brains of Transgenic Drosophila Melanogaster

Meriem Hadj Ahmed

Faculty Mentor: Dr. Alejandra Alonso

Department of Biology

Research Poster Presentations

Poster 31

The Birth of a New Religion in Eastern Nigeria **Christabel Amadi**

Faculty Mentor: Dr. Roslyn Bologh
Department of Sociology, Anthropology and
Social Work

Poster 32

Restructuring the Foundational Code of **Graph Theory Software Heidi**

Dmitriy Dubson
Faculty Mentor: Dr. Louis Petingi
Department of Computer Science

Poster 33

Analysis of Tau Over-Expression in **Breast Cancer Cell Lines**

Goldie Lazarus and Shawon Debnath
Faculty Mentor: Dr. Jimmie Fata
Department of Biology

Poster 34

The Tragedy of September 11th, Conspiracy **Theories, and Cognitive Dissonance**

Steven Serrano
Faculty Mentor: Dr. Florette Cohen
Department of Psychology

Poster 35

Attention to Emotional Tone of Voice in **Speech Perception in Children with Autism**

Dennis Vlasikov, Patricia Gaja, and Alexa Scharf
Faculty Mentor: Dr. Bertram Ploog
Department of Psychology

Poster 36

Cartooning in the Context of American **Humor Traditions**

Michael Young
Faculty Mentor: Dr. Catherine Lavender
Department of History

Poster 37

Mortality Salience and Religiosity as **Predictors of Christian Ritualism and Anxiety** **Sensitivity**

David J. Danischewski
Faculty Mentor: Dr. Florette Cohen
Department of Psychology

Poster 38

Four in Five

Daniel Muccio
Faculty Mentor: Dr. David Keberle
Department of Performing and Creative Arts

Poster 39

Transition Metal-Catalyzed Tandem Addition **Reactions of Aryldiboronic Acids**

Georges Bouobda Tsemo
Faculty Mentor: Dr. Qiao-Sheng Hu
Department of Chemistry

Poster 40

Ford in Russia: A Case Study in Foreign Direct **Investment**

Boris Mirsaliyev
Faculty Mentor: Dr. Alan Zimmerman
Department of Business

Poster 41

Not from Concentrate: An Alternative Rock **Quarry**

Alan Aurelia, Jenna Calderon, James Fletcher, Joseph
Giunto, Margaret Hampton, and Miles James
Faculty Mentor: Dr. William Bauer
Department of Performing and Creative Arts

Poster 42

Overexpression of Pseudophosphorelated Tau **in Transfected CHO Cell Cultures**

Regina Miller
Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

Poster 43

Examining the Relationship Between ADHD **and Epilepsy Using an Animal Model of Early** **Life Seizures**

Allyson Willner
Faculty Mentor: Dr. Dan McCloskey
Department of Psychology

Poster 44

Analysis of Benzene and Benzene Metabolites **on Breast Cancer Cell Migration**

Sajini Gundry
Faculty Mentor: Dr. Jimmie Fata
Department of Biology

Poster 45

Search of the Order Structure of Two **Enneadic Clusters**

Fatima Rafique
Faculty Mentor: Dr. Chwen-Yang Shew
Department of Chemistry

Poster 46**Transition Metal-Catalyzed Addition Reactions of Arylboronic Acids with Unsaturated Ketones**

Po Yun Pan, Swapna Paippattuthara, and Chun-Hui Xing
Faculty Mentor: Dr. Qiao-Sheng Hu
Department of Chemistry

Poster 47**The Effect of Taurine on Insulin Homeostasis in a Pancreatic B-Cell Line**

Christina M. Cuttitta
Faculty Mentor: Dr. William L'Amoreaux
Department of Biology

Poster 48**The Effects of Phosphate on Alkaline Phosphatase Activity in Candida Albicans**

Catherine Caesar
Faculty Mentor: Dr. Elena McCoy
Department of Biology

Poster 49**Effect of Pressure on the Stability of Water on a Superhydrophobic Membrane**

Meagan Derbyshire
Faculty Mentor: Dr. Alan Lyons
Department of Chemistry

Poster 50**Superhydrophobic Surfaces Exhibiting Anisotropic Roll-Off Angles**

Mark Barahman
Faculty Mentor: Dr. Alan Lyons
Department of Chemistry

Poster 51**The Effects of Income Inequality on Doing Business in China**

Ganna Volkova
Faculty Mentor: Dr. Alan Zimmerman
Department of Business

Poster 52**Conversion of a Miniature Vehicle to an Autonomous Platform**

Eric DeMaso, Dan Hoizner, and Michael Constantino
Faculty Mentor: Dr. Susan Imberman
Department of Computer Science

Poster 53**Effect of the Expression of Phosphorylated Tau in Transgenic Drosophila Melanogaster Eyes**

Kalpita Abhyankar
Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

Poster 54**Fruit Fly as a Model for the Expression of Human Tau Mutations in Alzheimer's Disease**

Shalini Camillus, Christopher Corbo, and Eugenia Alaniz
Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

Poster 55**Georges Méliès: Researching a Pioneer Filmmaker in London and New York Archives**

Liza Zusman
Faculty Mentor: Dr. Matthew Solomon
Department of Media Culture

Poster 56**The Effects of the Twenty-Six Year-Long Ethnic Crisis in Sri Lanka**

Kasuni Nanayakkara
Faculty Mentor: Ms. Donna Scimeca
Core 100 Program

Poster 57**Early Social Coordination and Communication Among Twins at Risk for Developmental Delay**

Lindita Ismaili
Faculty Mentors: Naomi Aldrich, Dr. Patricia Brooks, Dr. Sonia Ragir, Bernard Z. Karmel, Judith Gardner

Poster 58**How are Feminine Heterosexual Men Different?**

Peter Buratti
Faculty Mentor: Dr. Darryl Hill
Department of Psychology

Poster 59**Taking Steps Forward: Film, Society, and the Civil Rights Era**

Elizabeth Tilelli
Faculty Mentor: Dr. David Gerstner
Department of Media Culture

Research Poster Presentations

Poster 60

Toddlers' Perseveration During Difficult Locomotor Tasks

Maria Valonzo and Elliott Neiman
Faculty Mentor: Dr. Sarah Berger
Department of Psychology

Poster 61

Meta-analytic Investigations of Commonly Applied Educational Theories

Melissa Palladino
Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

Poster 62

Synthesis, Characterization, and Integration of Hybrid Nanogels for Biomedical Purposes

Michael Aiello
Faculty Mentor: Dr. Shuiqin Zhou
Department of Chemistry

Poster 63

Development of a Wax Sacrificial Layer for Micro 3D Printing

Brian Iskra
Faculty Mentor: Dr. Alan Lyons
Department of Chemistry

Poster 64

Empire MHz

David Rodberg
Faculty Mentor: Professor Valerie Tevere
Department of Media Culture

Poster 65

Memory-management Issues in iPhone Application Development

Elhassan Ahmed
Faculty Mentor: Dr. Deborah Sturm
Department of Computer Science

Poster 66

ePortfolio in Transition: What Happens When the Research Subjects Become the Researchers? The Verrazano School ePortfolio Pilot Project

Joseph Adia, Amanda Couso, Jeanine Ruggiero, and Amanda Tierney
Faculty Mentor: Ms. Louise Levine – Adjunct Lecturer
Department of English

Poster 67

The Effects of Cultural Lessons on Student Engagement

Jennifer Barlotta and Ashley Marino
Faculty Mentor: Dr. Judit Kerekes
Department of Education

Poster 68

Dental Health Care - Keep a Healthy Smile

Amanda Konzelman
Faculty Mentor: Dr. Judit Kerekes
Department of Education

Poster 69

Digital Alarm Clock

Jesse Goff
Faculty Mentor: Dr. Neo Antoniadis
Department of Engineering Science and Physics

Poster 70

Correlating Tree Cores and Climate in New York City

Victoria Cooper, Sarah Edkins, Peter Hannon, and James Lynch
Faculty Mentor: Dr. Atchanasios Koutavas
Department of Engineering Science and Physics

POSTER 1**FDIC Insured**

Qimei Luo

Faculty Mentor: Professor Michael Mandiberg
Department of Media Culture

FDIC Insured is an archive of the logos of failed banks cut into cast off get-rich-quick investment guides purchased at the dollar racks of the Strand bookstore. Since the beginning of the Great Recession, the Federal Deposit Insurance Corporation has taken control of over 70 failed or failing banks. The government has bailed out or brokered forced sales of a number of other major financial institutions. These emergency conversions are done in one weekend; on Friday the bank is alive, but at 6 PM it begins a massive autopsy, and by Monday morning all traces of the original bank are gone. It is operated under the name of a formal rival bank, many of the employees are gone, and the entire visual signage has changed. These logos disappear from our memory, they disappear from the clutter of the visual landscape, they are even erased from the Internet and its many archives.

POSTER 2**Do Part-Whole Relations Produce Facilitation in Lexical Access?**

Catherine Roca, Kevin Sailor,
Urooj Syed, and Paloma Wasserstein

Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

Context exerts a strong influence on the ease of word retrieval. For example, when reading a sentence, previously read words influence how rapidly the next word is retrieved. Likewise, in spoken language production, previously accessed words influence how rapidly subsequent words are retrieved. The picture-word interference task (PWI) was developed as a way to explore the effect of context words on speech production. Participants are instructed to name pictures while ignoring interfering words (IW's) superimposed over the pictures. The IW's thus provide a context for accessing the name of the target picture. Many studies have shown that adults are slower to name pictures if the IW is semantically related to the target picture than when it is unrelated to it. This semantic interference effect (SIE) is most often observed when the IW is a coordinate of the pictured object (DOG paired with wolf) and is presented simultaneously with the picture. There are two explanations of the SIE. First, the lexical competition account assumes that words are organized mentally in a lexical network with links connecting semantically related words. In the PWI tasks, spreading activation between semantically related words leads to competition in retrieving the name of target picture. Second, the response exclusion hypothesis proposes that the SIE is a post-lexical effect (outside of the lexical network) due to participants needing more time to exclude the IW as a possible name for the target picture. We conducted two PWI experiments where we varied both IW's. Part-terms associated with targets (FEATHER paired with bird) produced facilitation when the IW occurred in advance of the picture. Unassociated part-terms (PAWS paired with lion) produced a standard SIE. Because part-terms were not plausible candidate names for the picture, our findings are difficult to explain in terms of the response exclusion hypothesis, seem more compatible with the lexical competition account.

POSTER 3

A Probability Model for Wireless Sensor Networks

Janeth Toro

Faculty Mentor: Dr. Zhanyang Zhang
Department of Computer Science

Wireless sensor networks (WSN) are created when thousands upon thousands of sensor nodes are deployed over a general area and then used to track certain changes in the environment. Groups of these nodes form a cluster and communicate with each other in order to transfer information from one place to another. One of the main problems of these sensor nodes is that they have a limited amount of power. A solution to this predicament is the implementation of a Duty Cycle. A Duty Cycle occurs when certain nodes are chosen to go to “sleep” and awaken when another node goes to sleep. This helps save energy but it brings up another concern: How do we decide which nodes sleep and for how long? The aim of this project is to use a probability model to dynamically schedule sleep time and duration for the sensor nodes based on cluster size and other network constraints. We will first use a random model, where nodes fall asleep randomly while still maintaining Quality of Service (QoS) requirements. The main QoS constraint that will affect this research is the fact that there needs to be a minimum amount of nodes “awake” in order for the network to function properly. We will create a computer simulation that will simulate this environment and try to find an optimal solution to this problem of energy expenditure.

POSTER 4

Gaining Insight into New York's Climatic Future By Analyzing Climate Trends of Its Past

Brian Kateman, Gayathri Sudarsanan,
Jenna Calderon, Mallory Gioe, and
Jonathan Rossi

Faculty Mentor: Dr. Athanasios Koutavas
Department of Engineering Science and Physics

We have gathered tree cores from several different White Oaks in Palisades Park, NJ, dating back to 1829. By measuring the widths of the tree rings contained within the cores and comparing them with climate data from the region, we were able to determine the influence of precipitation, drought, and temperature on tree growth. Using this information we drew an historical account of New York's climate past and developed predictions on how climate will affect the same region in the future. After careful analysis of our collected data, it is distinctly evident that the growth of trees in Palisades Park is largely susceptible to the effects of drought. This conclusion was ascertained by correlating the Palmer's Drought Severity Index (PDSI) data for the last century with tree ring core data from the region for the same length of time. The greatest correlation was found when using PDSI values from June, July, and August, and by combining data from both previous and current years. Other environmental factors such as temperature and precipitation did not yield such high correlations. Using the PDSI data, we were able to ascertain that, despite the droughts that have occurred, the climate in the region appears to be becoming wetter, as precipitation levels have risen greatly in the past decade alone. These relationships can possibly be tied in with the debate over global warming, as warmer temperatures could increase the probability of drought because larger amounts of evaporation, particularly during summer and fall, could intensify drought conditions.

POSTER 5

**QRS Complex Detector
Implementing Orthonormal
Functions**

Leo Lei

Faculty Mentor: Dr. Natacha Gueorguieva
Department of Computer Science

The heart is one of the most important organs of the body, and disorders in its functioning can cause serious problems for the patient. Arrhythmias are abnormal heart beats. In fact, arrhythmias are heart diseases caused by heart electrical-conductive system disorders. Heart diseases are very slow (bradycardia) or very fast (tachycardia) heart functions resulting in inefficient pumping.

The heart state is generally reflected in the shape of ECG waveform and heart rate. The origin of ECG morphology can be explained by the dipole-vector theory, which states that the ECG is an expression of the electro-ionic changes generated during myocardial depolarization and repolarization. Various computer-based methodologies for automatic diagnosis have been proposed by researchers; however, the entire process can generally be subdivided into a number of separate processing modules such as preprocessing, feature extraction/selection, and classification.

In this research we focus on filtering the ECG signal in order to remove high frequency noise and enhance the QRS complexes, and on feature extraction. The latter is the determination of a feature or a feature vector from a pattern vector. Our focus is on the QRS complex as it is the most striking waveform caused by ventricular depolarization of the human heart, and therefore, its detection provides the fundamental for almost all automated ECG analysis algorithms.

Our feature selection approach is based on implementation of orthonormal functions. Representing ECG morphology by coefficients of orthonormal polynomials results in robust estimates of a few descriptive signal parameters and accurate representation of normal and deviating ECG pattern vectors by exposing subtle features of pattern vectors. The experimental data includes recordings from MIT dataset.

POSTER 6

**The Emergence of Social
Coordination and Communication
among Twins**

Vanda Melendez, Naomi J. Aldrich,
Patricia J. Brooks, and Sonia Ragir

Faculty Mentors: Dr. Patricia Brooks, and
Dr. Sonia Ragir
Department of Psychology

Research suggests that joint attention reflects vital aspects of psychological development, such as the emergence of the mental and behavioral processes essential to cognitive development and language acquisition. Integral to this relationship are the roles of non-verbal communication and an infant's readiness to imitate and reciprocate another's actions. While researchers have shown that twins use more non-verbal communicative exchanges than familiar same-age peers, they debate whether or not there are delays in twins' language development. Early work comparing twins to singletons indicates that twins are more likely to exhibit language deficits, but more recent studies suggest that delays that occur may be attributed to biological factors (e.g., low birth weight), rather than to being a twin. Moreover, some have suggested that developmental delays may be worse for at-risk singletons than for twins. The present study explores the expression of social coordination, imitation, and reciprocity in twins.

Twin dyads were videotaped during a ten-minute free play session at 7-months ($n = 10$) and 10-months ($n = 10$) (ages adjusted for prematurity). Each sibling's behavior was coded for the expression of joint attention, non-verbal social coordination, play patterns, communicative gestures, and early language. Results are discussed in relation to preliminary findings of the beneficial effects of constant social stimulation, such that a twin at risk for developmental delay may have a better prognosis than a comparable high-risk singleton. The confirmation of such benefits has important implications for the design of early intervention programs encountering increasing numbers of at-risk premature multiple gestation births.

POSTER 7

Individual Differences in Adult Foreign Language Learning

Annemarie Donachie, Rosemarie Marronaro, Urooj Syed, Jessica Lee, Irosha Pathirage, Manuel Garcia, and Nicola Brown

Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

How individuals learn a language remains a mystery. Our study investigates the psychological processes involved in adult foreign language acquisition, using Russian as the language to be learned. Saffran (2003) has argued that language acquisition depends on learning mechanisms that extract statistical regularities (such as recurrent sequences or patterns) to determine the locations of word boundaries and syntactic structures. Our experiment tests the hypothesis that measures of statistical learning (in particular the artificial grammar learning task) will be predictive of success in adult foreign language learning. Participants were 76 CSI undergraduates, 51 females and 25 males, ages 18-42, with no prior experience learning Russian. Participants were given different tests and questionnaires that assessed verbal working memory capacity, statistical learning of sequences, pattern identification, speech perception, prior exposure to foreign language and musical abilities. Participants also received six 35-minute language-learning sessions during which they listened to and repeated Russian phrases and answered comprehension and production probes to assess learning. In the final session, participants completed a generalization test examining their ability to generate Russian phrases different from the ones used in the training sessions (i.e., to say things in Russian that they had never heard before). Our poster examines correlations among the verbal working memory and statistical learning tasks, as the language learning data has not yet been tabulated.

POSTER 8

Applying Lattice Reduction to Knapsack Cryptosystems

Jonathan Maltz

Faculty Mentor: Dr. Kevin O'Bryant
Department of Mathematics

We examine lattices and the use of lattice basis reduction in the cryptanalysis of knapsack cryptosystems.

POSTER 9

The Louis Armstrong Symposium

Linda Soria and Ziv Karmi

Faculty Mentor: Dr. William Bauer
Department of Performing and Creative Arts

On November 21 2009, several notable jazz scholars gathered to discuss the artistry and legacy of jazz legend, Louis Armstrong. The presenters included Ricky Riccardi, Michael Cogswell, John Szwed, James Leach, William Bauer, Jeffrey Taylor, and Dan Morgenstern. Each scholar approached Armstrong's artistry from a different angle, discussing the factors that made him one of the most distinctive and prolific artists of the 20th century. Discussions ranged from the approach Armstrong took to improvisation, both in his vocal music (Leach and Bauer), and in his instrumental music (Riccardi); his record collection (now housed at CUNY's Louis Armstrong House Museum in Queens) and what it says about him (Cogswell); the pianists who worked with him in Chicago in the 1920s (Taylor); and his importance to an unreleased film of Orson Welles, as well as speculation on the reasons why Armstrong is still a prominent figure—not only in jazz, but also in American music and culture (Morgenstern). Panel discussions enabled the audience to interact with the scholars and to hear indepth consideration of some of the issues that surfaced in the presentations. A website for the symposium features archived video footage of the presentations, offering visitors a window into the insights that these scholars shared. This poster presentation will feature screen shots of the website. A laptop computer with Internet access will enable visitors to screen some of the video footage archived on the website.

POSTER 10

An Easter Cantata

Chris Spinelli

Faculty Mentor: Dr. William Bauer
Department of Performing and Creative Arts

This project, the composition of an Easter Cantata, was inspired by my research into English hymnody. From the passages of the gospels that tell the Easter story, I have selected texts and composed music for them. Through this music, I created a series of dramatic scenes that reflect the mood of the texts and convey the emotional impact of the images that these texts conjure up. The melodies that I wrote not only reflect the tone of the text, but also set the texts in a manner that is easy to be sung and understood. Movements alternate between solo arias, some with recitatives, and choruses. The keyboard accompaniment supports the chorus and soloists, and helps to move the story forward by musical means. Using Sibelius and other music technology resources, I will prepare a digitally “engraved” score, and a MIDI version in order to offer an audio “sketch” of the score. This poster-board presentation will feature representative examples from the score. A laptop with headphones will enable visitors to listen to segments of the score, realized as digital audio files.

POSTER 11

The Music SILOH Project

Ziv Karmi

Faculty Mentor: Dr. William Bauer
Department of Performing and Creative Arts

America's music, as ethnically and stylistically diverse as its people, has made a place for itself here on Staten Island. Woven into the fabric of their lives, music helps Staten Islanders give shape to their experience as members of different communities or scenes; each scene, in turn, is characterized by a musical style, or genre, and an expressive culture. Island communities have formed around such distinct musical idioms as jazz, hip-hop, and heavy metal, to name a few.

Precious little research documents Staten Islanders' musical activities and the beliefs that inspire them. So few people know about the island's rich musical and cultural heritage. By creating a platform on which to document and catalogue trends in Staten Island's musical history, the Music SILOH Project will provide a single locale for this valuable information. The Music SILOH Project is a custom-designed WordPress website hosted by the CSI Library. It allows for hosting information on Staten Island's oral history, with descriptions and audio clips, online. Visitors to the site can view and listen to featured articles, browse items by category, read about SILOH and how to get involved, and more.

Are older community members passing traditions on to younger members? Are musical traditions and memories being lost? What can we learn from the people who are now making music on Staten Island? Are larger cultural forces affecting how Staten Islanders create, perform, market, and experience music? The Music SILOH Project seeks to answer these and related questions.

POSTER 12

Individual Differences in Speech Perception and Language Learning

Rosemarie Marronaro

Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

Research suggests that statistical sequence learning plays an important role in speech perception and language acquisition (Conway, Bauernschmidt, Huang, & Pisoni, in press; Saffran, 2003). Our study examines the relationship between sequence learning, as measured using an Artificial Grammar Learning (AGL) task (Misyak & Christiansen, 2007), and individual differences in foreign language speech perception. Two studies presented English speakers with foreign language tonemes spoken by a male and a female speaker of Norwegian. Participants made same-different judgments of pairs of Norwegian words differing only with respect to the presence of a rising versus dipping toneme. AGL, nonverbal IQ, and prior experience with foreign languages were used as predictors of individual differences. Study 1 results showed a significant correlation between AGL and Norwegian toneme perception, and, unexpectedly, a gender difference favoring men in toneme perception. This gender effect appears to be consistent with a male advantage in auditory processing reported in other studies (McRoberts & Sanders, 1992; Norreelgen et al., 2001; Wallschlaeger, 1997). An additional finding was that participants were more accurate in making toneme judgments for the female voice, which had longer vowel durations than the male voice. Study 2 attempted to replicate the gender effect, with stimuli equated for vowel length. With the modified stimuli, there was no effect of voice, and the effect of participant gender was no longer significant. As in Study 1, the AGL task was a significant predictor of sensitivity to the Norwegian toneme contrasts. Whereas several studies have emphasized the role of statistical sequence learning in the acquisition and processing of phonology (Gervain & Mehler, 2010; Conway et al., in press), our study is the first to demonstrate such a link in adult foreign language speech perception.

POSTER 13

Kantian Concepts in the Works from the Generacion de 1898

Victoria Cooper

Faculty Mentor: Dr. Nuria Morgado
Department of Modern Languages

The Generación de 1898, or Generation of '98, consisted of essayists, poets, and philosophers who wrote about the moral, social, and political calamity that Spain went through as a country after being defeated in the Spanish American War. Four of the main writers that emerged from this unit were Antonio Machado, Miguel de Unamuno, Azorín, and Pío Baroja. This study focuses on how Kantian notions of both intuition and concepts are reflected in the works of these writers. The research that I completed on these authors has revealed a direct connection between Kant's philosophy and the mental state of Spain in troubling times. Such connections include: the troubles that Spain has gone through and the struggle of her people in a time where a singular identity did not exist; the Kantian idea of objectivity, and that both intuition (elements of the senses) and concepts (understanding) are necessary to make valid conclusions; how metaphysical concepts are greatly detailed in poetry; themes of loneliness, isolation, and nostalgia for the old Spain; and individual and national identity.

POSTER 14

Gender and Displacement in Georgia

Stephanie Helewa

Faculty Mentor: Dr. Peter Kabachnik
Department of Political Science, Economics, and Philosophy

Currently there are between 257,000-277,000 Internal Displaced Persons (IDPs) residing in the Republic of Georgia, hoping to return to their former homes or at least be integrated with the local communities. They were displaced due to internal conflicts from 1991-1993 and 1998, and the 2008 Russia-Georgia War. Most IDPs are from Abkhazia and South Ossetia, two separatist regions in Georgia. Most IDPs live in substandard living conditions, and suffer high rates of unemployment as well as serious health problems. Nearly half reside in collective centers, which are mainly various types of public buildings that were never intended to be used as permanent housing, for example hospitals, schools, and hotels. These buildings have been occupied for over 17 years now, and very little improvements have been made to them. Displacement alters gender relationships, as men lose their jobs during the conflict and many become soldiers. Studies show that men have a harder time adjusting than women, while at the same time, still upholding previous patriarchal gender ideals. Thus, in many IDP families, women have had to become the breadwinners, taking on new responsibilities associated with being the head of the household. Many IDPs understand these drastic transformations as symbolic of the experience of displacement and yearn for their lives before displacement. Non-governmental organizations (NGOs) working with IDPs in Georgia impact these gender relationships by having programs that focus on women and many more women participants, which help to empower women, but also contribute to processes of demasculinization and strained relationships between husbands and wives.

POSTER 15

Comparative Analysis: Attachment Patterns and Bases of Self-Worth in Males and Females of Intact and Non-intact Families

Victoria Porcell

Faculty Mentor: Dr. Florette Cohen
Department of Psychology

The intention of the present study is to contrast individuals of intact and non-intact (divorced) families in terms of bases of self-worth (on what the individual bases their self-esteem; for example, physical attractiveness or others' approval) and attachment patterns (insecure or secure attachment types) through the lens of their interpersonal dealings and intimate relationships. In addition, the goal is to find differences between males and females with both types of family backgrounds. Based on previous research in this area, the main hypothesis contended that those of intact and non-intact families have different attachment patterns; specifically, those of non-intact families will express insecure attachment patterns, while those of intact families will have secure attachment patterns and corresponding contingencies of self-worth. Instead, mediating factors, such as participants' perception of emotional support from parents and extended family members, became the main focus of the study. Specific findings and implications will be discussed.

POSTER 16

The Effects of Mortality Salience on Self-Perceived Resiliency

Esther Kabalkin

Faculty Mentor: Dr. Florette Cohen
Department of Psychology

This experiment explored the prevalence of self-perceived resilience when thoughts of one's own death or death of a loved one are used as a Potentially Traumatic Event (PTE). Three-hundred and seventeen participants were given a survey containing demographic questions, a Terror Management Theory manipulation, a resiliency scale, an anger scale and questions about PTE's they may have previously experienced. Participants were given surveys for one of three manipulation groups, test anxiety, mortality salience or grief salience. Results were inconclusive. Implications are discussed.

POSTER 17**Experiments of Herding Attack on Iterative Hash Functions**

Dan Hoizner and Vladislav Klym

Faculty Mentor: Dr. Xiaowen Zhang
Department of Computer Science

Most practical cryptographic hash functions used today, SHA-1, SHA-2, and MD families, are iterative hash functions and follow the Merkle-Damgard construction by relying on repeating the underlying compression function X times. The common properties discussed when determining the strength of a hash function are collision resistance, preimage resistance, and second preimage resistance. Several attacks have been found against these hash functions, one of them being called a herding attack. The herding attack exploits a property not commonly used to rate hash functions, called chosen target forced prefix (CTFP) preimage resistance. This property allows an attacker to "herd" a chosen prefix to a previously committed hash value. This is done, as shown by Kelsey and Kohno [KK], by forming a diamond structure of intermediate hash steps and herding any given starting part of a message to the committed hash value by choosing an appropriate prefix found using the diamond structure. Another name given to the attack is the "Nostradamus attack," due to the attack allowing an attacker to "predict the future" by violating a certain property of a hash function. Using the CUNY High Performance Computing Center (HPC), we will verify how fast such an attack can be mounted. This will be done by generating a diamond structure for a given hash function (SHA-1 and MD5 for our purposes) and herding any chosen prefix to a committed hash value. Both a birthday paradox attack and hash function specific vulnerabilities will be examined and implemented on the HPC cluster, allowing us to find the fastest possible time for such an attack to be mounted both for a hash function with no published exploits and a hash function with published vulnerabilities (Lenstra, Wang, and de Weger [LWW] for MD5).

POSTER 18**The Contribution of Spinal and Supraspinal Loci to Opioid-Induced Hyperalgesia**

Megan Caldwell

Faculty Mentor: Dr. Benjamin Kest
Department of Psychology

We have observed that acute systemic morphine injection can increase nociception in mice. Although this opioid-induced hyperalgesia is independent of prior or concurrent opioid receptor activity, it is nonetheless blocked by the non-competitive NMDA receptor antagonist MK-801. To assess whether spinal and/or supraspinal CNS loci contribute to systemic morphine hyperalgesia, mice were injected with the opioid antagonist naltrexone and then tested for nociception on the tail-flick test before and after receiving an acute morphine bolus dose via the intrathecal (IT) or intracerebroventricular (ICV) route. Furthermore, the contribution of NMDA receptors at spinal and supraspinal loci was also studied in naltrexone treated mice by assaying nociception before and after IT and ICV MK-801 injection in mice treated with an acute systemic morphine bolus dose. Whereas IT and ICV morphine injection both caused significant hyperalgesia, IT and ICV MK-801 blocked hyperalgesia after systemic morphine injection. The data indicate that morphine injected into spinal and supraspinal loci can increase nociception, but that the ensuing hyperalgesia is not mediated by opioid receptors. The data also indicate that the ability of MK-801 to block opioid-induced hyperalgesia after systemic morphine injection may be mediated by NMDA receptors at either spinal or supraspinal loci.

POSTER 19

Development and Testing of Curcumin Derivatives as Promising Drugs Against Breast Cancer

Ashley Mathai

Faculty Mentor: Dr. Jimmie Fata
Department of Biology

Curcumin is a phenolic compound derived from the rhizome *Cucuma longa* and it is commonly used as a spice for food coloring and flavoring. Curcumin has proven to be an effective anti-inflammatory, anti-carcinogenic, and anti-infectious drug and has therefore received much scientific and medical attention. Unfortunately, Curcumin is insoluble in water and is biodegraded quickly when administered to patients. Therefore, a derivative of Curcumin that overcomes these characteristics may prove to be more effective than Curcumin itself. In analyzing Curcumin, we have found that at concentrations of 50 mM it can negatively affect a number of human breast cancer cell lines. We then set out to evaluate the 4 novel derivatives of Curcumin for their ability to affect several different breast cancer cell lines in a similar fashion as seen with Curcumin. Of these derivatives, one was found to act negatively against the breast cancer cell lines as efficiently as Curcumin. We show that this derivative, called Dendrimer-Curcumin, is also soluble in water, which may make it a more effective drug than Curcumin itself. Further analysis of Dendrimer-Curcumin derivative is on the horizon; it holds promise as a novel and effective therapeutic Human breast cell lines, and they exhibit unique responses to curcumin and curcumin derivatives.

POSTER 20

Pairing Cognitive and Personality Factors for Prediction Academic Performance

Keith Miller

Faculty Mentor: Dr. Florette Cohen
Department of Psychology

Cognitive ability tests (CAT) are the finest, most researched, available predictors of performance, but they possess an unfair bias towards the minority population. Personality has been found to be a strong predictor of performance that is free of subgroup differences. This correlational study aimed to pair personality and cognitive factors in order to predict academic performance as measured by grade point average (GPA). Fluid intelligence (IQ) was measured by R. B. Cattell's Culture Fair Intelligence Test (CFIT), and the Big Five personality factors were measured by Goldberg's International personality Item Pool (IPIP). I theorized that when people score high on intellect, conscientiousness, and IQ, they will possess a high GPA. I hypothesized that the CFIT will show no bias in testing between genders and ethnicities. In total, results were based on 126 participants and indicated that GPA was predictable when intellect and conscientiousness interacted. Intellect was found to have a positive significant correlation with overall college GPA and a positive significant correlation with IQ. Implications for workplace testing are discussed.

POSTER 21

**Mickey, Marvel, and Memories:
Exploring the Role of Nostalgia in
Consumer Response to Disney**

Lauren LoPrimo

Faculty Mentor: Dr. Susan Holak
Office of Academic Affairs and Department
of Business

The Walt Disney Company is a leading provider of entertainment globally with a brand loyal consumer following. The Company uses various forms of nostalgia to appeal to a diverse demographic of consumers. Nostalgia, “a painful yearning to return home,” describes a bittersweet emotion where we view the past with longing. Disney is a master at resurrecting these feelings in their customers through their popular icons, characters, and settings that seem to reflect “the good old days.” Disney’s Main Street in the Magic Kingdom is an ideal example of how the Company controls a setting to use nostalgia to draw in consumers. Disney’s recent acquisition of Marvel Entertainment’s library of 5,000 characters has the potential to attract an entirely new demographic using the same marketing strategy.

This research will focus on the Company’s use of nostalgic icons, characters, and settings to build brand equity, and the impact of this marketing tactic on consumer behavior and consumer perception. The study will identify and analyze the types of nostalgia that the Company utilizes, and the role that nostalgia plays in consumer perceptions, behavior, and the purchase decisions of Disney’s consumer base. The research will involve secondary data collection about Disney’s properties, characters, and creative works from academic journals in the social sciences and business press, in order to document types of nostalgia and nostalgic appeals used by the Company. In addition, observational research at the Walt Disney Resort in Orlando, Florida will be conducted to document nostalgia themes and sources.

POSTER 22

**Infants’ Locomotor Expertise
Changes Body Awareness**

Pawan Kaur and Seray Taysin

Faculty Mentor: Dr. Sara Berger
Department of Psychology

Self awareness is the awareness of one’s own existence (Brownell, Ramani, & Zerwas, 2007). Self-awareness has a protracted development in infancy because it seems to be comprised of different types of awareness, such as body awareness, the ability to recognize and relate the body to the environment. The aim of this study was to investigate individual differences with the potential to influence infants’ body awareness, such as locomotor posture, locomotor expertise, and problem-solving skills. Forty-four infants, grouped according to locomotor ability, participated in a goal-directed task in which they had to navigate through a tunnel to reach a goal (their caregiver) at the other end. After several trials, cognitive demands were increased by changing the location of the goal and asking infants to take a new tunnel to a new location. Walking infants had to recognize that they had to switch to crawling to fit into the tunnel and to stay crawling in order not to bump their bodies into the tunnel. When cognitive demands were increased, infants in the transition group were more likely to bump into the tunnel than any of the other groups. The group in the midst of the transition from crawling to walking (less than one week walking experience, but not yet given up crawling) found navigating the tunnels most difficult, for example bumping their heads upon entering or standing up while still inside. With the acquisition of each locomotor posture, infants must reestablish representations of their bodies in the environment.

POSTER 23

Effects of Phonological Cues in Lexical Access

Paloma Wasserstein, Catherine Roca, Urooj Syed, and Diana Almodovar

Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

This study used a cross-modal picture-word interference task (PWD) to study the effects of phonological cues in lexical access. Participants (18 adult native English speakers) were instructed to name pictures presented on a computer screen while ignoring auditory distractors, interfering words (IW), presented through headphones. Across blocks of trials, the IWs occurred at different stimulus asynchrony conditions (the onset of the IW preceded the picture by 750 ms, 450 ms, or 150 ms, or occurred 150 after the appearance of the picture). The IWs differed with respect to their relationship to the name of the target picture. Sometimes the IW was the name of the picture (e.g., “lock” paired with a picture of a lock), sometimes the IW was phonologically related to the name of the picture (e.g., “log” paired with a picture of a lock) but named a different picture, sometimes the IW was unrelated (e.g., “bed” paired with a picture of a lock), and sometimes it was the word “good.” The objective of the experiment was to explore how phonological cues influence lexical access in children with typical and atypical language development, more specifically how priming effects of onset-related distractor words influence speed of retrieval (reaction time). This poster presents a preliminary study of an adult group, along with data from several children. We anticipated that IWs with phonological features in common with the name of the picture would speed picture naming in adults and children, but that the time course of the phonological priming effect would depend on the amount of phonological overlap.

POSTER 24

The Role of Locomotor Expertise on Limb Preference

Marierose Polis

Faculty Mentor: Dr. Sarah Berger
Department of Psychology

During infants’ first year, manual and pedal side preferences develop. Before attaining a stable hand preference, infants hand use alternates between right and left (Corbetta & Thelen, 1996, 1999; Fagard 2006), eventually establishing an increased right-handed bias from 7 to 11 months (Michel, Sheu, & Brumley 2001). Lead-out preference is using one limb over the other to begin a locomotor maneuver, as in crawling or walking (Peters, 1988). Thirteen-month-old crawlers and walkers show a stable lead-out preference in the moment (Polis, Berger, & Friedman 2009). However, no cross-sectional studies have been conducted examining the stability of infant lead-out preference over time. The aim of this study is to document the course of lead-out preference over several months and over locomotor transitions.

Novice and Expert Crawlers and Walkers traversed a path repeatedly to reach a goal at the end of a path. Replicating previous work on footedness, most infants showed a preference in the moment for one lead-out limb. This work also echoes previous work on the development of handedness, showing lead-out preference instability over the longer-term. With the acquisition of each new motor skill, the entire motor system may be in flux until the skill is mastered. These findings demonstrate the importance of making behavioral observations at multiple time scales to understand underlying developmental trajectories, specifically the stability or instability associated with the acquisition of new motor abilities.

POSTER 25

Chinese Industrialization and American Portrayal

Dwight Dunkley

Faculty Mentor: Dr. Ming Xia

Department of Political Science, Economics, and Philosophy

China is an emerging superpower and the size of the Chinese economy is expected to overtake the Japanese economy during 2010 as the second largest economy in the world, behind the United States. The amazing economic growth that China is currently undergoing is a result of an incredible thirty-year period of industrialization and urban development taking place across the entire Chinese mainland since then-Paramount Leader Deng Xiaoping announced his economic reforms in 1978. But China's rapid industrial build-up has not been without costs, particularly human and environmental costs. Coupled with these costs is a uniquely Chinese phenomenon, whereby economic production has been greatly liberalized, while the political form of government remains largely authoritarian, opaque, unaccountable, and undemocratic.

Perhaps due to deficiencies of this form of government, there have been recent industrial disasters that have resulted in many thousands of Chinese being killed, poisoned, or maimed. Most notoriously, the case of melamine adulteration of milk and milk formula gained worldwide attention in 2008. This study intends to examine media coverage and exposés of that case of melamine milk adulteration in China in juxtaposition to the cases of American peanut butter recalls and tomato recall which took place in 2008-09. I intend to code and analyze articles about each event that have appeared in Western news media for bias, and if there is a bias, to examine which causal factors may be at play.

POSTER 26

The Influence of Perceived Race and Gender Presentation on the Sentencing of Female Juvenile Offender

Carene Hadad

Faculty Mentor: Dr. Kathleen Cumiskey

Department of Psychology

In an effort to explain differences in sentencing severity, social scientists have looked towards defendant characteristics for explanations. It is clear that defendant characteristics matter in sentencing (Albonetti, 1991). These differential impacts arise because defendant characteristics catalyze stereotypes (Bodenhausen, 1988; 2005). The stereotypes then provide evaluators with information about who is likely to be guilty, blameworthy, corruptible, and rehabilitated among a host of other expectations (Bodenhausen, 1988; 2005; Lynch & Haney, 2000). Once activated these expectations guide the types of evidence one remembers and subsequently bases a decision on (Brewer, 1996; Lynch & Haney, 2000). Within racial groups there are gender differences, which result in more lenient sentences, despite the actual severity of the crime (Steffensmeier & Demuth, 2006; Steffensmeier, Ulmer & Kramer, 1998). Recent results suggest that sentencing is lenient to the degree to which women uphold traditional gender stereotypes in appearance and behavior (Janicki, 1999; Haegerich & Bottoms, 2000; Streib, 1990; 2004).

The present study seeks to demonstrate the interaction effects of race and gender-presentation among court involved female juveniles during judgment. Participants responded to several questionnaires that were then analyzed to assess racial and gender stereotypes and possible differences in judgment dimensions of guiltiness, blameworthiness, corruptibility, and rehabilitation. Other measures indicated the degree to which the target was assumed to adhere to traditional gender role expectations.

POSTER 27

Demonstrating Urbi Using the AIBO Robotic Dog

Vitaly Nirenberg and Justin Allen

Faculty Mentor: Dr. Susan Imberman
Department of Computer Science

This research project examines the different techniques of Artificial Intelligence and different forms of robotics programming via the AIBO robotic dog. AIBO is a robotic dog that was manufactured by Sony until early 2006, when the project was discontinued. The goal was to replicate an experiment by Micah Lapping-Carr in which a Nintendo Wii remote was used to remotely control an AIBO. Although we successfully controlled a computer with the remote, connecting to the AIBO proved almost impossible due to Sony's discontinuation of the AIBO project since the original experiment was done. Further research into methods to interface with the AIBO led to the discovery of Urbi. Urbi is a very powerful script language, which allows for programming of various robots, including AIBO. The Urbi SDK is very powerful, and it allows the user to wirelessly connect to the AIBO and monitor code execution as it happens in real time. Another useful program to robotics is Webots, which provides a development environment to model and simulate robots in the real world. It is compatible with both AIBO and Urbi code, and is a great asset for any robotics programmer.

POSTER 28

Development of New Pd-Catalyzed Tandem Reactions for Organic Synthesis

Qixin Liu, Amy He, Matthew Isreal, and Yuan-Xi Liao

Faculty Mentor: Dr. Qiao- Sheng Hu
Department of Chemistry

Transition metal-catalyzed addition reactions of arylboronic acids with carbonyl-containing compounds constitute some of the most attractive methods to access arylmethyl alcohols, imines and ketones. Combining such addition reactions with other bond forming reactions to produce tandem/domino reactions would provide highly efficient tools for organic synthesis. In our group, we are interested in developing new tandem reactions involving transition metal-catalyzed addition reactions and C-H activation process, which has never been explored previously.

Type I metalacycles including palladacycles have been previously found to be effective catalysts for the addition reaction of arylboronic acids with aldehydes.¹⁻³ In this presentation, a new tandem reaction, which combines Type I palladacycle-catalyzed addition reaction with C-H activation process, will be presented.

Acknowledgments:

We thank the NSF for financial support. We also thank members of the Hu research group for their help and support.

POSTER 29**Biosynthesis of Truncated Ste2p; A GPCR from Yeast that may be Suitable for Crystallization**

Grigoriy Gelfand

Faculty Mentor: Dr. Fred Naider
Department of Chemistry

G-protein coupled receptors (GPCRs) constitute one of the largest families of membrane receptors. These heptahelical integral membrane proteins (IMPs) induce an intracellular signaling cascade and are used as the targets for a wide range of pharmaceuticals. To design agonists or antagonists that bind to GPCRs and create drugs with better efficacies it is essential to understand their 3-D structures. At present, the three dimensional structures of only a handful of GPCRs are known. We are investigating Ste2p, a GPCR that is found in *Saccharomyces cerevisiae*. Crystallization of IMPs is hampered by their inherent flexibility. We are engineering Ste2p to limit its molecular movements and increase its propensity to crystallize. We have constructed a plasmid that codes for the expression of an analog of Ste2p that has a truncated cytoplasmic tail (CT) reducing the size of the protein from 431 to 302 residues. We have also performed site-directed mutagenesis on this plasmid to mutate the tyrosine residue at position 266 to alanine. It has been shown that this mutation causes a conformational change to put Ste2p into its inactive state. Another construct being worked on in parallel is constitutively active Ste2p. If both constructs are successfully expressed, purified and crystallized, we will be able to observe the conformational changes involved in activation/inactivation.

Expression conditions were optimized using SDS-PAGE and Western Blot. We decided to engineer the plasmid differently due to unsuccessful mass spectroscopy results. Earlier, we placed a rhodopsin tag on the C-terminal end of our protein linked to residue 302 through a glycine linker. We have decided to put the rhodopsin tag 30 residues away from the putative end of the seventh transmembrane domain. A second construct has the rhodopsin tag on the N-terminal extracellular side of Ste2p. These proteins will be expressed, purified and characterized by mass spectroscopy before crystallization trials.

POSTER 30**Effect of Phosphor Tau Expression in Brains of Transgenic Drosophila Melanogaster**

Meriem Hadj Ahmed

Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

Communication between cells is essential, and for a cell to perform this job, it needs a functional cytoskeleton system. Therefore, once the cell loses the function of its cytoskeleton, many diseases can develop. Neurons, like any other cell, need the function of their cytoskeleton, composed of microtubules, microfilaments, and neurofilaments. When neurons lose the microtubules, neurodegeneration results. A mutation on one of its proteins causes the cytoskeleton not to function.

In this experiment we test the effect of tau on the cytoskeleton. *Drosophila* flies will be used in this experiment, because of the gene similarity between the *drosophila* and humans. Hyperphosphorylation of tau is believed to be a cause of tau-induced neurodegeneration. Transgenic *Drosophila* expressing tau pseudophosphorylated at Thr 212, Ser 231, and Ser 262 have been generated in our lab. Two wild type tau and the pseudophosphorylated tau transgenic *Drosophila* will be used to study the effect of pseudophosphorylated tau expression in the flies' brain. After tau expression is induced, the *drosophila*'s brain will be examined using histology as well as immunohistochemistry. The implications for Alzheimer's disease will be discussed.

POSTER 31

The Birth of a New Religion in Eastern Nigeria

Christabel Amadi

Faculty Mentor: Dr. Roslyn Bologh
Department of Sociology, Anthropology
and Social Work

Nigeria, Africa's most populous country, has a very diverse culture, climate, and, topography that affect her stature and interaction. It comprises a lot of ethnic groups, but the three major groups are Hausa, generally located in the northern part of the country; Yoruba, generally located in the southwestern part; and Igbo, located in the southeastern part. About 50% of Nigerians are Moslems, generally located in northern Nigeria, and about 50% are Christians, generally located in the southern part of the country. Islam spread to the northern part of Nigeria in the ninth century through the trans-Sahara trade with North Africa, and Arabs, and also by conquest. Christianity, however, spread in the southern part of the country in the fifteenth century through the European exploration of the hinterland and the trans-Atlantic slave trade. Paganism, animism, and other indigenous religious practices still exist in varying forms, even amongst Christian and Moslem converts.

In South Eastern Nigeria, the Igbo (or Ibo), the smallest of the three major tribes, comprising approximately 30 million people representing 18% of Nigeria's total population of approximately 167 million, speak the Igbo (or Ibo) language, which includes about 100 different dialects. It is among the Ibos in a village called Okam that this project centers, following the metamorphosis of Jebbe, an outcast who grew up as a noble in a noble home and helped found the new religion of 'Umsu' among the Ibo outcaste group, the 'Osu'.

POSTER 32

Restructuring the Foundational Code of Graph Theory Software Heidi

Dmitriy Dubson

Faculty Mentor: Dr. Louis Petingi
Department of Computer Science

Heidi is a topological tool in which a topology (i.e., graph) is drawn and a set of graph theoretic algorithms can be applied to the given topology to assess graph-theoretical properties (connectivity, number of spanning trees, distance, etc.). Heidi is an essential tool for carrying out crucial research regarding graph theory and its algorithms. However, a number of obstacles arise when attempting to implement new algorithms in Heidi. In order to introduce new algorithms to this software, the programmer or the researcher has to be deeply knowledgeable in the foundational code of Heidi. This is a constraint that needed to be removed by an addition of standardized structures and rearrangement of code, as to produce a coherent hierarchy for the design process of future algorithms.

A graph adjacency-list is a widely used data-structure crucial for computer internal representation of topologies (graphs), and it was one of the notable additions to Heidi that it sorely lacked. With the adjacency list, the visual connectivity of the graph is directly translated into a coherent data-structure that programmers are very familiar with, and they will use to implement their algorithms.

Our first choice to test the new structural additions and changes to Heidi was the implementation of Dijkstra's Shortest Path algorithm. This algorithm is essentially used for finding, for example, the shortest distances between cities (e.g., map directions). Since cities and the highways connecting them could be modeled as the nodes and links of a graph, respectively, and the distances between cities are represented by assigning weights to the links (or connections), implementation of Dijkstra's Shortest Path algorithm was a logical choice. This algorithm was run on several weighted graphs, where algorithmic accuracy as well as significant reduction in implementation time, were observable consequences of the performed structural changes.

POSTER 33

Analysis of Tau Over-Expression in Breast Cancer Cell Lines

Goldie Lazarus and Shawon Debnath

Faculty Mentor: Dr. Jimmie Fata

Department of Biology

Tau proteins are microtubule-associated proteins that are abundant in neurons of CNS. Tau is known to stabilize microtubules by binding to both their inner and outer surface. Tau-microtubule binding shifts the reaction kinetics towards microtubule polymerization and regulates chromosomal alignment and separation during mitosis. Another important function associated with Tau is the bundling of microtubules in the nerve cells. Tau binding to microtubules depends on the phosphorylation state(s) and the Tau isoform type. Recently, Tau has been found to be important in breast cancer as a marker of Paclitaxel sensitivity. With this information, we aim to figure out a number of things involving Tau in breast cancer cell lines. These will include 1) an examination of the morphological effects caused by over-expression of Tau in normal and breast cancer cell lines; 2) analysis of several cell phenotypes including invasion, migration and proliferation; and 3) a determination of whether over-expression alters cytoskeleton elements such as tubulin and actin. These findings will provide insight into the functional significance of Tau in breast cancer cell lines.

POSTER 34

The Tragedy of September 11th, Conspiracy Theories, and Cognitive Dissonance

Steven Serrano

Faculty Mentor: Dr. Florette Cohen

Department of Psychology

Alternative theories regarding the tragedy of September 11th, 2001, are becoming increasingly present in society. A prevalent alternative theory entails the belief that (a) explosives placed in WTC towers 1, 2, and 7 were the causes of collapse, and (b) that a missile, not an airplane actually impacted the Pentagon. An exposure to information study was conducted to test whether the impact of information (low, high) or frame of information (without conspiracy theory heading, with conspiracy theory heading) would elicit a larger attitude change in participants, while also looking at how feelings of powerlessness (Neal & Groat, 1980) affect responses. This study addresses previously divergent findings that one should argue (a) the most extreme position (Zimbardo, 1960) or (b) a more moderate position (Whittaker, 1963), when the intent is attitude change. Our hypotheses are: (1) Impact will significantly affect attitude change; high-impact conditions will drive this effect, and (2) Conspiracy theory frame will have no dissonance-reducing effects and will therefore not reduce the magnitude of attitude change. Results were in the hypothesized direction and showed high-impact information as well as feelings of powerlessness in society to have significant effects on attitude change with regard to 9/11-related issues. Social and theoretical implications are discussed.

POSTER 35

Attention to Emotional Tone of Voice in Speech Perception in Children with Autism

Dennis Vlasikov, Patricia Gaja, and Alexa Scharf

Faculty Mentor: Dr. Bertram Ploog
Department of Psychology

A video-game was developed to assess speech perception in moderate-to-low functioning children with autism (Ploog, Banerjee & Brooks, 2009). Nine children with autism and eleven with typical development listened to prerecorded sentences varying with respect to content and prosody (enthusiastic vs. grouchy tone of voice). Children used a mouse to control a cartoon bird to peck at nuts (i.e., response buttons). Pecks at one nut correlated with one sentence (S+) were rewarded; pecks at the alternative (correlated with another sentence, S-) were not. The S+ might be "Bob parked a van!" (in an enthusiastic voice), and the S- might be "Dan rode a bike." (in a grouchy voice). After the child reached criterion, the game proceeded to the test session. At testing, children listened to stimuli consisting of recombination of the content (C) and prosodic (P) features of the training stimuli ($S+ = C+P+$ and $S- = C-P-$). During test sessions, we replaced half of the training trials with five types of test trials as follows: $S+$ vs. $C+P-$, $S+$ vs. $C-P+$, $S-$ vs. $C+P-$, $S-$ vs. $C-P+$, and $C+P-$ vs. $C-P+$. Although children with autism required more training sessions to reach criterion ($M = 5.2$ vs. 1.0), both groups played successfully and maintained a high level of accuracy on $S+$ vs. $S-$ trials during the test sessions. This topic is important because the literature has documented atypical perception of speech prosody in high-functioning individuals with autism and has generated inconsistent findings (Boucher et al., 2000; Järvinen-Pasley et al., 2008; Lindner & Rosén, 2006; Peppé et al., 2007; Rutherford, Baron-Cohen, & Wheelwright, 2002). We found that both groups discriminated sentences based on content and emotional tone of voice. The children with autism showed no deficit in perceiving content or prosody. The typical children showed a preference for enthusiastic prosody.

POSTER 36

Cartooning in the Context of American Humor Traditions

Michael Young

Faculty Mentor: Dr. Catherine Lavender
Department of History

My thesis will focus on the work of American cartoonists who developed and changed the form throughout the 20th century. I will analyze the roots of cartooning to give the reader a sense of what came before them and why these arts were so groundbreaking. These cartoonists will include Bill Amend (Foxtrot), George Herriman (Krazy Kat), Gary Larson (The Far Side), Charles Schultz (Peanuts), and Bill Watterson (Calvin and Hobbes). I will be exploring cartooning as a social and psychological phenomenon, and why people respond to cartoons differently than creative expression in any other medium.

POSTER 37

**Mortality Salience and Religiosity
as Predictors of Christian
Ritualism and Anxiety Sensitivity**

David J. Danischewski

Faculty Mentor: Dr. Florette Cohen
Department of Psychology

An experiment was conducted to investigate mortality salience and personal religious orientation as determinants of Christians' desire to participate in the sacraments of Reconciliation (confession) and Holy Communion, their perceived function of these rituals, as well as their subsequent anxiety sensitivity thereafter. Two-hundred Christian undergraduate psychology students at the College of Staten Island were surveyed. Results indicate that religiosity played a significant role in determining ritualism; however, reminders of death did not. Furthermore, anxiety sensitivity was found to be greatest in control conditions. Implications of these findings are considered.

POSTER 38

Four in Five

Daniel Muccio

Faculty Mentor: Dr. David Keberle
Department of Performing and Creative Arts

I have composed a musical piece under the supervision of Professor David Keberle. The piece was composed using a pitch class set (E F# B D#). By using different variations of this pitch class set, I have composed five very different sounding movements for guitar quartet. This musical piece brings you on a journey through tonality: The first movement sounding tonal, the second movement sounding atonal, the third movement is mostly percussive, the fourth movement sounding atonal, and finally ending with the fifth movement sounding tonal.

POSTER 39

Transition Metal-Catalyzed Tandem Addition Reactions of Aryldiboronic Acids

Georges Bouobda Tsemo

Faculty Mentor: Dr. Qiao-Sheng Hu
Department of Chemistry

Transition metal-catalyzed addition reactions of organoboronic acids with carbonyl-containing substrates, such as aldehydes, alpha,beta-unsaturated ketones, etc., constitute some of the most attractive methods to access chiral ketones and alcohols, because organoboronic acids are readily available, air/moisture-stable. The development of tandem reactions with such addition reactions as the key reaction component(s) is becoming one of the frontiers in organic synthesis, because tandem reactions combine two or more bond forming reactions in a single operation without the necessity to purify or isolate the reaction intermediates. In our group, we are interested in developing new tandem reactions involving double additions of organoboronic acids to aldehydes and alpha,beta-unsaturated ketones.

Aryldiboronic acids are readily available and have been extensively employed for transition metal-catalyzed cross-coupling reactions. However, their use for addition reactions including tandem addition reactions, which could allow easy access of useful building blocks for organic synthesis, remains unexplored. In this presentation, the preparation of two arylboronic acids and the use of these arylidiboronic acids for tandem addition reactions will be presented.

Acknowledgments

We thank the NSF for financial support. We also thank members of the Hu research group for their help and support.

POSTER 40

Ford in Russia: A Case Study in Foreign Direct Investment

Boris Mirsaliyev

Faculty Mentor: Dr. Alan Zimmerman
Department of Business

Russia is a rapidly growing and changing nation, presenting many unique opportunities and challenges to potential investors. Since Vladimir Putin's rise to power in the year 2000, Russia has experienced relative political stability and strong year over year growth in its GDP. Many multinational firms began to explore ways of entering the Russian market, with its large population, growing middle class, and strong reserves of technically skilled labor. Ford Motor is one of the most successful foreign firms operating in Russia today, and its investment in the country continues to grow. Ford's relationship with Russia truly blossomed during President Putin's second term, when the Russian Duma passed legislation placing high tariffs on imported vehicles as a protectionist measure for domestic auto manufacturers. Ford's executives immediately took notice of this opportunity for FDI. Foreign direct investment allows multinational corporations to capitalize on market imperfections artificially created by foreign governments through tariffs, quotas and other trade barriers. Through FDI, Ford established factories throughout Russia to produce vehicles domestically, avoiding import tariffs all together and gaining a key competitive advantage over other foreign and domestic vehicle manufacturers. Likewise, Ford's first-mover advantages created entry barriers for other corporations wishing to emulate its example. "Ford in Russia: A Case Study in Foreign Direct Investment" offers an in-depth look at foreign investment opportunities for corporations in Russia, and the unintended consequences of government regulations.

POSTER 41**Not from Concentrate: An Alternative Rock Quarry**

Alan Aurelia, Jenna Calderon,
James Fletcher, Joseph Giunto,
Margaret Hampton, and Miles James

Faculty Mentor: Dr. William Bauer
Department of Performing and Creative Arts

Mining the depths of the rock idiom, the songwriters and performers of the group *Not from Concentrate* have done more than unearth fossils. Having dug down into the rich soil in which reggae and rocksteady grew, they have resurfaced with buried treasure in hand: a refreshingly original vision of contemporary music and repertoire of songs that brings that vision to life. Inspired by ska, a style born in Jamaica that derived from calypso, American rhythm and blues, and other styles, these artists have taken that style to a new level by infusing their songs with elements from a wide range of other sources, including jazz, blues, and classical music. The songs' lyrics, about such varied subjects as the delights and perils of being young and foolish, or the sheer pleasure of making music together, add a layer of playful irony to the stylistic references. The poster reveals aspects of the group's creative process, such as song lyrics, and sketches its history and its approach to marketing and distribution. Recorded selections will provide the conference attendees with a sampling of the music these artists have created together. In addition to the poster, a live performance will also put this group's archaeological finds on display.

POSTER 42**Overexpression of Pseudophosphorelated Tau in Transfected CHO Cell Cultures**

Regina Miller

Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

Tauopathies are diseases that are characterized by aggregation of the microtubule associated protein tau into neurofibrillary tangles. It has been confirmed that hyperphosphorylation of tau stimulates filament and tangle formation in *Drosophila* (Jackson et al., 2002); however, it is also possible that the over expression of tau alone can lead to neurodegeneration. Disturbance in the microtubule structure, abnormally hyperphosphorylated tau, leads to a progressive degeneration of surrounding neurons. The fundamental mechanism responsible for synaptic breakdown that precedes cell death in Alzheimer's disease and other neurodegenerative diseases is the accumulation of hyperphosphorylated tau. The direct effect is a disruption in microtubule assembly, which directly correlates to synaptic loss and pathology of Alzheimer's disease. Impaired cognitive function of AD is associated with this lesion as well. We have previously shown that the cytosolic Alzheimer hyperphosphorylated tau (AD P-tau) sequesters normal tau, MAP1A, MAP1B and MAP2, which results in the inhibition of microtubule assembly and disruption of microtubules and self assemble into filaments. We discuss how the expression of tau can be regulated and then viewed with immunofluorescence. We also study the effect of overexpression of pseudo-phosphorelated tau in transfected CHO cell cultures, in both regular and inducible systems. The implications of tau aggregation and its self-assembly in relevance to Alzheimer's disease pathogenesis is further discussed.

POSTER 43

Examining the Relationship Between ADHD and Epilepsy Using an Animal Model of Early Life Seizures

Allyson Willner

Faculty Mentor: Dr. Dan McCloskey
Department of Psychology

Children with epilepsy are more likely to develop Attention Deficit Hyperactivity Disorder (ADHD) than children without epilepsy. However, the cause of this relationship is unknown. To test the possibility that epileptic seizures can cause ADHD, the current study will examine two features of ADHD in an animal model of epilepsy: decreased DRD4 dopamine receptor expression, and impaired sustained attention. The hypothesis is that DRD4 will be significantly decreased and attention will be impaired following early life seizures in rats. The perinatal hypoxia model, a new model for early onset temporal lobe epilepsy, was used. Sustained attention was measured behaviorally using a variation of the 5-choice serial reaction time task (5-CSRT). DRD4 receptors were quantified using immunohistochemistry. While the behavioral studies are ongoing, preliminary data suggest that epileptic rats have a reduction in the DRD4 receptors in the prefrontal cortex area of the brain.

POSTER 44

Analysis of Benzene and Benzene Metabolites on Breast Cancer Cell Migration

Sajini Gundry

Faculty Mentor: Dr. Jimmie Fata
Department of Biology

The simple aromatic compound benzene is found ubiquitously in the atmosphere. It is naturally produced from crude oil and petroleum and is even found in cigarette smoke. It is also an industrial precursor to a larger number of commercially available products. The toxigenicity of this compound has been well established. It is known to be hemotoxin as well as a carcinogen. Environmental benzene has been shown to cause a hazard in occupational setting, including positions directly associated with oil refineries and petroleum combustion. Though the carcinogenicity of benzene has been well established in myelogenous cell lines, the compound's role in breast cancer has not yet been made clear. The National Toxicology Program 11th Report on Carcinogens established a link between benzene exposure and mammary tumor genesis. To date, there has been no indication whether benzene can affect cancer progression, specifically breast cancers. To begin to address this question, we treated the human breast cancer cell line BT549 with benzene, benzoquinone, or hydroquinone and analyzed whether these chemicals can affect cellular migration. Our results suggest that breast cancer cell migration can be affected by these chemicals. The findings further suggest that benzene, and benzene metabolites may alter breast cancer progression.

POSTER 45**Search of the Order Structure of Two Enneadic Clusters**

Fatima Rafique

Faculty Mentor: Dr. Chwen-Yang Shew
Department of Chemistry

Self-assembly remains one of the frontier interdisciplinary research areas because of its close connection with numerous naturally occurring molecular structures and new applications in molecular design. It remains a great challenge to understand the driving forces to induce the order structured from the self-assembly formation process. In this project, we have carried out Monte Carlo simulation to search the order structure of two enneadic clusters, each of which is composed of nine charged hard spheres bound to an oppositely charged central hard sphere of same diameter to maintain the electroneutrality. We find that each cluster keeps its structural symmetry nearly intact as an isolated cluster. The separation of the two clusters plays a secondary role to distort the intramolecular structure of both clusters. As the interaction strength between particles becomes large enough, the system makes the transition from the disordered structure to the ordered structure. The ordered structure exhibits a unique morphology in which the nine particles on each cluster takes the geometry like an arrow along the axis connecting the two clusters, and the planes of the two arrows, arising from the two clusters, are arranged perpendicularly. This novel order structure may be attributed to optimizing the dipolar interaction between the two clusters, which is important to understand the role of electrostatic interaction on the formation of the order structure in the self-assembly process.

POSTER 46**Transition Metal-Catalyzed Addition Reactions of Arylboronic Acids with Unsaturated Ketones**Po Yun Pan, Swapna Paippattuthara,
and Chun-Hui XingFaculty Mentor: Dr. Qiao-Sheng Hu
Department of Chemistry

Transition metal-catalyzed addition reactions of arylboronic acids with carbonyl-containing compounds have emerged as useful methods to access chiral organic compounds which are important building blocks and/or starting materials for organic synthesis. In our laboratory, we are interested in developing new transition metal-catalyzed addition reactions for the making of biologically-active compounds.

In this presentation, the study of transition metal-catalyzed addition reaction with a hydroxyl group-containing -unsaturated ketones and its application as the key step for the synthesis of β,α (R)-Tolterodine, a biologically active compound, will be presented.

Acknowledgments

We thank the NSF for financial support. We also thank members of the Hu research group for their help and support.

POSTER 47

The Effect of Taurine on Insulin Homeostasis in a Pancreatic β -Cell Line

Christina M. Cuttitta

Faculty Mentor: Dr. William L'Amoreaux
Department of Biology

In the endocrine pancreas, a rise in extracellular glucose to 3 mM is sufficient to cause the release of insulin from the beta cells. The mechanism by which this occurs involves the closing of ATP-dependent K channels, which increases calcium flux and subsequent exocytosis of insulin. Taurine, a conditionally essential amino acid, is transported into cells via the taurine transporter (TauT). Taurine transport may cause an alteration in membrane potential that could ultimately affect the release of insulin. Using a pancreatic beta cell line (Hit-T15), we tested the hypothesis that taurine transport may affect insulin homeostasis. We found that treatment with 1 mM taurine causes a significant reduction in the amount of insulin present in these cells compared to cells treated with a sub-threshold glucose concentration (1 mM). The data suggest that taurine transport alone can result in changes in transmembrane currents sufficient to cause insulin release.

POSTER 48

The Effects of Phosphate on Alkaline Phosphatase Activity in *Candida Albicans*

Catherine Caesar

Faculty Mentor: Dr. Elena McCoy
Department of Biology

Candida albicans is a significant human pathogen in which the ability to induce yeast to hyphal dimorphism constitutes a virulence factor. A number of different signaling pathways may be activated during dimorphic transition depending on the particular environmental trigger. In glucose medium, filamentation has been reported to be dependent on the glucose:phosphate ratio. We have noted that growth of *C. albicans* strain CC504 in galactose minimal medium containing 100 mM phosphate supports filamentation and biofilm formation. We have also noted a growth delay early in the exponential growth phase in cells grown in the same medium. Using a qualitative test for alkaline phosphatase using bromo-chloro-indoyl phosphate as the assay substrate and spheroplast preparations of cells grown in minimal medium for 24h at 37C, we have observed intracellular dye accumulation. Studies are currently in progress to demonstrate the PHO8 alkaline phosphatase by fluorescent antibody labeling and confocal microscopy.

POSTER 49**Effect of Pressure on the Stability of Water on a Superhydrophobic Membrane**

Meagan Derbyshire

Faculty Mentor: Dr. Alan Lyons
Department of Chemistry

Superhydrophobic surfaces, both naturally occurring and fabricated in the laboratory, are composed of small posts. The roughness of the surface and the hydrophobic material properties combine to support water droplets on top of the posts (Cassie state), instead of falling between the posts and wetting the entire surface (Wenzel state). When the superhydrophobic surface is placed at the base of a column, water can be supported on top of the posts up to a critical height (or pressure). However, only a limited height of water can be supported before the water pressure exceeds the surface tension and the Cassie state transitions to the Wenzel state. This transition occurs at relatively low pressures and limits the usefulness of superhydrophobic surfaces.

The goal of this experiment is to increase the water pressure that a superhydrophobic surface can support. Our approach is to fabricate a superhydrophobic surface supported on a porous mesh instead of a solid base. In this way we can control the air pressure below the membrane independently as the water height is increased. Measurements of the water pressure that can be supported on a porous superhydrophobic surface as a function of air pressure below the membrane will be reported.

POSTER 50**Superhydrophobic Surfaces Exhibiting Anisotropic Roll-Off Angles**

Mark Barahman

Faculty Mentor: Dr. Alan Lyons
Department of Chemistry

Superhydrophobic surfaces exhibit high contact angles with water ($>150^\circ$) and low-drag such that water droplets easily roll off such surfaces. In nature, some plant leaves such as the lotus leaf can be found which exhibit such properties. Recently, the wings of the butterfly (*Morpho aega*) have been reported to exhibit superhydrophobic surfaces with anisotropic roll-off angles. On the wing surface, water droplets easily roll away from the butterfly's body, but in the opposite direction, water drops are pinned and thus prevented from contacting the insect's body. Such surface structures would be useful for the fabrication of passively controlled micro-fluidic devices.

We have fabricated polymeric superhydrophobic surfaces that exhibit a roll-off angle anisotropy similar to that observed on butterfly wings. The surface is composed of a regular, square array of features where each feature is itself anisotropic. A robotic printing system was developed to dispense these silicone elastomer features. By controlling the material (composition and rheological properties) as well as dispense properties (e.g. tip diameter, translation angle, pitch, dispense height, time and pressure,) surfaces were fabricated with well-defined properties. We will present roll-off angle and contact-angle data and correlate surface properties with surface morphology.

POSTER 51

The Effects of Income Inequality on Doing Business in China

Ganna Volkova

Faculty Mentor: Dr. Alan Zimmerman
Department of Business

China plays an important role in the international arena today. Powered by the world's rapidly changing economy, many of the world's most powerful companies would like to enjoy some of the advantages of doing business in China. However, as in many countries where reforms such as industrialization were implemented to speed up the economy, there is an increased inequality in the distribution of household income among the Chinese population. With this type of economic reform, the government has allowed some people to become rich first. Restrictions on private economic activities have been banned, allowing entrepreneurship and diversification in sources of income. In urban areas this change became a bonus, while in rural areas, farming now is household-based, and income differences depend on resources, ability, and effort.

The change in the Chinese economy and its type of market has created an increase of foreign investment into the country. However, it is very important to know how income inequality impacts the way business is done in China. The research paper "The Effects of Income Inequality on Doing Business in China" defines what income inequality is and how to measure it. It offers a look at the historical background and describes actions the Chinese government is taking to counter income inequality. However, the main goal is to analyze how income inequality influences doing business in China.

POSTER 52

Conversion of a Miniature Vehicle to an Autonomous Platform

Eric DeMaso, Dan Hoizner, and
Michael Constantino

Faculty Mentor: Dr. Susan Imberman
Department of Computer Science

Turning a power wheels jeep into a completely autonomous vehicle necessitates many changes. These include the addition of sensors, modification of the stock motor control such that it can be controlled by a microcontroller, and modification of the steering method in order to bypass the stock steering wheel and implement a method that can be controlled autonomously. Using the power wheels jeep as a chassis, sensors will be added on, including a webcam, in order to detect pathway edges; a sonar array, in order to detect obstacles at close range; and a GPS receiver, in order to determine absolute position. In addition to adding sensors, the stock pedal assembly installed on the jeep was removed, with the motors being wired up to two MC7 motor controllers, with each allowing a 35 amp draw, and the steering wheel was bypassed with a 6" stroke linear actuator being attached directly to the steering linkage and wired up to a spike relay. Controlling everything will be an Arduino microcontroller, which would act as a gateway, being fed inputs from all the sensors and controlling the two motors and the linear actuator. The Arduino shall additionally serve as a bridge connecting the laptop processing data from the webcam to the motors. All image processing will be done using the OpenCV platform. Ultimately, the jeep will be able to accurately and efficiently traverse the pathways of a college campus following a series of GPS waypoints including a final waypoint that simulates "offroading" by moving off the paved pathways onto a field with obstacles.

POSTER 53**Effect of the Expression of Phosphorylated Tau in Transgenic *Drosophila Melanogaster* Eyes**

Kalpita Abhyankar

Faculty Mentor: Dr. Alejandra Alonso
Department of Biology

It is pivotal to understand the mechanistic function of synaptic breakdown that precedes cell death in Alzheimer's disease (AD) and other neurodegenerative diseases. One of the causes of neurodegenerative diseases is a defunct tau protein. Accumulation of hyperphosphorylated tau causes the disruption of microtubules, which are related to synaptic loss and pathology of Alzheimer's disease. Impaired cognitive function and pathology of AD is correlated with this lesion. We have previously shown that the cytosolic Alzheimer hyperphosphorylated tau (AD P-tau) sequesters normal tau, MAP1A, MAP1B and MAP2, which results in the inhibition of microtubule assembly and disruption of microtubules and self assemble into filaments. Tau promotes the assembly and stabilizes microtubules. Our model of study is the *Drosophila* that has the tau homolog exhibiting 46% identity with the sequence of human tau protein and has similar features such as microtubule-binding domain.

Transgenic flies (*Drosophila melanogaster*) that express the human tau in different phosphorylated forms, wild type and mutations display important features of the human disorder. We will be studying the effects of the retinal over-expression of wild-type human and pseudophosphorylated tau in transgenic *Drosophila* that cause abnormal eye morphologies. The effects of pseudophosphorylated tau on the transgenic *drosophila* eye are discussed.

POSTER 54**Fruit Fly as a Model for the Expression of Human Tau Mutations in Alzheimer's Disease**Shalini Camillus, Christopher Corbo,
and Eugenia AlanizFaculty Mentor: Dr. Alejandra Alonso
Department of Biology

Neurons lose their ability to function properly as they age. This is the major significance in human neurodegenerative diseases collectively called Taupathies. Alzheimer's disease (AD), Frontotemporal Dementia (FTD) and Corticobasal degeneration (CBD) are few examples for them. Tau is a microtubule associated protein mainly found in neurons. Studies related to Alzheimer's disease have found that highly phosphorylated Tau is associated with these neurons. Tau is capable of interacting with the normal Tau MAP1, MAP1B and MAP2. Hyperphosphorylated Tau interrupts microtubule assembly in neurons and has the ability to self assemble. It is crucial to investigate the mechanism of neurodegeneration induced by phosphorylated tau. The purpose of this research project is to study and identify these changes that are expressed in the *Drosophila melanogaster* (Fruit fly) in comparison to wild type fly phenotypes. The main phenotypes that are considered are the eye and the brain structures. Transgenic fruit flies are created by microinjection of mutant Tau genes to the Fruit fly embryos. These injected genes were isolated by plasmid DNA purification of the *E. coli*. Tau gene was incorporated into the pUAST plasmid to generate transgenic *Drosophila*. The transgenic fly lines that carry these genes and the inducer fly lines are reared and maintained in correctly labeled vials with proper care. Crossing between the mutant gene carrying fly lines and the inducer fly lines enables the expression of the Tau mutation in the following generations. The comparison of the Scanning Electron Microscopic pictures of the structures of the eye and brain structures of the Fruit flies before and after the crossing of the lines gives the understanding of how human tau hyperphosphorylation affects the structural and functional changes. The study will enable us to understand the role of hyperphosphorylated Tau in neurodegeneration in Alzheimer's disease.

POSTER 55

Georges Méliès: Researching a Pioneer Filmmaker in London and New York Archives

Liza Zusman

Faculty Mentor: Dr. Matthew Solomon
Department of Media Culture

As one of the earliest pioneers of cinema, Georges Méliès introduced various narrative and technical approaches to movie making. In my research, I dug deep into his surviving personal correspondence and located numerous articles published in French and English during the past eighty years that document his extraordinary career through research at the British Film Institute, the Museum of Modern Art, and the New York Public Library Research Libraries. A small part of the project focused on the rumored destruction of Georges Méliès's company by his own brother, Gaston; the majority of the research dealt with Georges' prolific career, which has been the subject of many previous studies. In more than 500 films, Georges Méliès created an entirely new way of making movies and helped introduce special effects into filmmaking. As a stage magician at the Théâtre Robert-Houdin, Méliès learned various tricks of the trade, which he later adapted in his mind-bending short films. After thoroughly digging through dozens upon dozens of rare transcripts and articles at the British Film Institute, I've come to learn various new things about the filmmaker's life. By analyzing his life through available resources, I have learned how Méliès came to be such an amazing filmmaker and why so many scholars have taken an interest in his work.

POSTER 56

The Effects of the Twenty-Six Year-Long Ethnic Crisis in Sri Lanka

Kasuni Nanayakkara

Faculty Mentor: Ms. Donna Scimeca
Core 100 Program

My research project will explore the twenty-six year long ethnic conflict between the Sinhalese and the Tamil populations in Sri Lanka. This project will examine the historical background of the war, including the effects of British colonial rule on the society of Sri Lanka. My research will delve into the root causes of the crisis and describe the ten main factors that have contributed to its escalation into a separatist war since independence in 1948.

My presentation will include a timeline that traces the effects the war had on Sri Lanka's economy, its government, and its social structure. This will also include the many failed attempts at peace, and how the war finally ended. Lastly, it will review the role foreign powers had on the conflict as well as their reactions to the end of the war. Included in my presentation will also be video clips of the effects the war had on the people of Sri Lanka.

POSTER 57

Early Social Coordination and Communication Among Twins at Risk for Developmental Delay

Lindita Ismaili

Faculty Mentors: Naomi J. Aldrich*, Dr. Patricia J. Brooks**, Dr. Sonia Ragir*, Bernard Z. Karmel***, Judith M. Gardner***

Research suggests that joint attention reflects vital aspects of psychological development, such as the emergence of the mental and behavioral processes essential to language acquisition (Mundy & Newell, 2007). Integral to this relationship are the roles of non-verbal communication and infants' readiness to imitate and reciprocate each other's actions (Bakeman & Adamson, 1984). We investigated the emergence of joint attention and social interaction between twins at risk for developmental delay due to low birth-weight, prematurity, and/or CNS injury. Twin dyads were videotaped during a 10-minute free play session at the equivalent gestational ages (EGA) of 7-months (n = 10), 10-months (n = 10), 13-months (n = 10), 16-months (n = 10), 19-months (n = 10), 22-months (n = 10), and 25-months (n = 10). Each sibling's behavior was coded for the expression of joint-attention, non-verbal social coordination, play patterns, and communicative gestures. We also examined the influence of several birth variables: birth weight concordance/discordance, estimated gestational age, degree of brain injury and intrauterine growth restriction (IUGR) on the twins' development of joint attention and further related these to later scores on the Mental Scale (MDI) and Motor Performance Scale (PDI) of the Bayley-II at later ages. Preliminary results revealed age related increases in a variety of social communication behaviors and positive correlations between IUGR and birth weight discordance and social engagement states.

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**The College of Staten Island and The Graduate Center, CUNY

***NYS Institute for Basic Research in Developmental Disabilities

POSTER 58

How are Feminine Heterosexual Men Different?

Peter Buratti

Faculty Mentor: Dr. Darryl Hill
Department of Psychology

Men in American society are held to restrictive standards of masculinity. As a result, "feminine" men often experience difficulties in finding a romantic partner. This study examines the traditional beliefs of feminine heterosexual men and their relationship dynamics. Male students at the College of Staten Island were given a packet of questionnaires asking about demographics, traditional gender beliefs and the sexual self. Men who identified themselves as relatively feminine, on average, had different attitudes about gender, in several important ways, all of which were consistent with a subversion of heteronormativity, challenging stereotypical sex roles in a wide range of ways. Also consistent with our hypotheses, feminine men were less likely to endorse "direct/outspoken" items when rating their sexual self schema, and showed a tendency to have non-stereotypical views of their sexual self."

POSTER 59

Taking Steps Forward: Film, Society, and the Civil Rights Era

Elizabeth Tilelli

Faculty Mentor: Dr. David Gerstner
Department of Media Culture

The height of the Civil Rights era was one of the most influential, groundbreaking, and tumultuous periods America's society has faced in modern times. Significant events, such as school integration, mixed marriages, court cases, Martin Luther King Jr., and Malcolm X, occurred during this time. America's culture and society were on a constantly shifting bed of sand. The steps society made toward ideals of complete integration were met with mixed feelings amongst the "conservative" and "liberal" states. Hollywood filmmakers nonetheless did not shy away from the social events and outcries of a changing nation. By analyzing films made between 1949 and 1969, I make a comparison of Hollywood's representation of the integration in both the northern and southern States. I used films such as *In the Heat of the Night* (1967), *To Kill a Mockingbird* (1962), and *Pinky* (1949) to represent the "conservative" south and *Blackboard Jungle* (1955), *Guess Who's Coming to Dinner* (1967), and *Putney Swope* (1969), the more "liberal" north. Analysis has shown that the social exchanges between races in film and reality are similar. The "conservatives" met integration with extreme hostility, prejudice, and condemnation, while the "liberals" were more accepting, a person's personal progress was realized, and equality was more than a distant dream.

POSTER 60

Toddlers' Perseveration During Difficult Locomotor Tasks

Maria Valonzo and Elliott Neiman

Faculty Mentor: Dr. Sarah Berger
Department of Psychology

According to the cognitive capacity theory, the development of inhibition is contingent on the ability to perform multiple tasks while simultaneously balancing several cognitive demands (Sirois & Shultz, 2006). The inability to inhibit repeated behaviors is perseveration. In the locomotor A not B task, infants perseverated during difficult locomotor tasks because motor demands taxed infants attentional resources (Berger, 2004; 2010). The trade-off for completing a motorically difficult task was a cognitive error-perseveration. The aim of this study was to examine the cognitive capacity theory in older children by quantifying the range of toddlers perseveration during difficult locomotor tasks. Toddlers ages 18, 24 and 30 months old participated in a low demand, goal-directed task (walking on flat pathway) that served as a control to two high demand goal-directed tasks (walking on balance beams; descending staircases). All conditions required toddlers to reach the goal at one location (A). After several trials, the goal was moved to another location (B). The primary outcome measure was whether toddlers took a new direct path to the goal or perseverated by taking the old path. Toddlers exhibited a range of perseverative errors, such as starting down the old path and correcting themselves toward the new path, glancing at the previous location, or backing to avoid an obstacle. Perseveration was graded nature because the kinematic effort required to perform the difficult locomotor task overtaxed toddlers' attention resources.

POSTER 61**Meta-analytic Investigations of Commonly Applied Educational Theories**

Melissa Palladino

Faculty Mentor: Dr. Patricia Brooks
Department of Psychology

Since Cronbach's work (1957), educators have been interested in whether learners with differing aptitudes and/or abilities should be taught in different ways. This question has sparked a controversy about the efficacy as well as the ethics of providing differential educational treatments to students with different backgrounds. A wide range of educational research has looked for so-called 'aptitude-by-treatment interactions' (ATIs), in which learners with different abilities (e.g., intelligence, visualization skills, verbal abilities) or predispositions (e.g., anxiety levels, internal vs. external locus of control) were given different educational treatments (e.g., using graphic versus verbal/numerical presentation of mathematics, inductive vs. deductive instruction). Cronbach and Snow (1977) argued that individual differences in cognitive abilities or aptitudes affect instructional outcomes. With this in mind, they suggested that educators tailor the instruction to the specific learning styles and abilities of their students. With a theoretical framework similar to that of Gardner's (1983) theory of multiple intelligences, i.e., that learners have different profiles of strengths and weaknesses across different domains (music, math, interpersonal relations, verbal skills, visual/spatial, etc.), ATI theory has been incorporated in school curriculum designs and teaching strategies around the world. Our study evaluates this literature using meta-analysis to test the predictions of ATI theory. The poster presents preliminary statistics for the first 25 research papers surveyed. Although our preliminary literature review has yielded hundreds of studies, unfortunately, few contain appropriate statistics, comparison groups, and overall experimental designs. This highlights the desperate need for quantitative studies designed to examine the efficacy of such a strongly advocated practice.

POSTER 62**Synthesis, Characterization, and Integration of Hybrid Nanogels for Biomedical Purposes**

Michael Aiello

Faculty Mentor: Dr. Shuiqin Zhou
Department of Chemistry

We report a class of polysaccharide-based hybrid nanogels that can integrate the functional building blocks for optical pH-sensing, cancer cell imaging, and controlled drug release into a single nanoparticle system, which can offer broad opportunities for combined diagnosis and therapy. The hybrid nanogels were prepared by in-situ immobilization of CdSe quantum dots (QDs) in the interior of the pH and temperature dual responsive hydroxypropylcellulose-poly(acrylic acid) (HPC-PAA) semi-interpenetrating polymer networks. The -OH groups of the HPC chains are designed to sequester the precursor Cd²⁺ ions into the nanogels as well as stabilize the in-situ formed CdSe QDs. The pH-sensitive PAA network chains are designed to induce a pH-responsive volume phase transition of the hybrid nanogels. The developed HPC-PAA-CdSe hybrid nanogels combine a strong trap emission at 741 nm for sensing physicochemical environment in a pH dependent manner and a visible excitonic emission at 592 nm for mouse melanoma B16F10 cell imaging. The hybrid nanogels also provide excellent stability as a drug carrier, which cannot only provide a high drug loading capacity for a model anticancer drug temozolomide, but also offer a pH-triggered sustained-release of the drug molecules in the gel network.

POSTER 63

Development of a Wax Sacrificial Layer for Micro 3D Printing

Brian Iskra

Faculty Mentor: Dr. Alan Lyons

Department of Chemistry

3D printing techniques are effective tools for the creation of specialized structures and even surfaces. Superoleophobic surfaces, or surfaces that repel water as well as organic solvents with lower surface tensions (ie: gasoline), have been created on the nanoscale using 3D lithographic techniques. We are attempting to create these surfaces on the microscale, using 3D printing techniques to lower costs and create surfaces on non-planar structures. In this study, we examine an aspect of this process of constructing the surface that involves usage of a wax sacrificial material. This sacrificial material must be compatible with a superhydrophobic surface and it also must be smooth when solid, a property not found among many low melting point waxes. Higher molecular weight waxes require too much heating leading to distortions from expansion and contraction. In this work, we analyzed the interactions between various waxes and silicone, as well as the effect of cooling on wax surface texture, to help us determine the proper material for this project.

POSTER 64

Empire MHz

David Rodberg

Faculty Mentor: Professor Valerie Tevere

Department of Media Culture

Professor Valerie Tevere's project Empire MHz "will take form as a sound/video installation that evokes the harmonic resonances of the broadcast tower of the Empire State Building."

"*Empire MHz* examines the relationship between the physical architecture of the antenna tower and the invisible spaces in which the radio and television spectrum occupies. Sounds transmitted are inaudible until you use a recording or receiving device. In this way, a television or small transistor radio can make a direct connection to the massive broadcast tower of the Empire State Building. *Empire MHz* is a work that will be located in-between the space of transmission and reception with recordings made from the Mooring Mast."

During the Summer/Fall of 2009, I assisted Professor Valerie Tevere with the video production of Empire MHz, which is currently in production. I contributed to the work as a camera operator on various video shoots, and assisted in the editing of the footage. I also learned and worked with editing software for DVD production, trained in Adobe Photoshop for video production use.

POSTER 65

Memory-management Issues in iPhone Application Development

Elhassan Ahmed

Faculty Mentor: Dr. Deborah Sturm

Department of Computer Science

Smart phones and PDAs are projected to soon surpass laptops as the preferred platform for mobile computing. This trend presents software developers and researchers with new opportunities as well as challenges. We examine performance issues related to memory management on these memory-constrained devices. Specifically we will examine various scenarios with the use of performance tools on the iPhone running graphic-based games.

POSTER 66

ePortfolio in Transition: What Happens When the Research Subjects Become the Researchers? The Verrazano School ePortfolio Pilot Project

Joseph Adia, Amanda Couso,
Jeanine Ruggiero, and Amanda Tierney

Faculty Mentor: Ms. Louise Levine -

Adjunct Lecturer

Department of English

The ePortfolio pilot project began in Fall 2009 with nine Verrazano students working 1 hour per week as part of their College Writing course. Using Blackboard's "Expo," an enhanced Wiki, students developed their own "ePortfolios" with the goal of providing a place to keep their work, track their progress, and capture their first year experience. The long term goal includes continued use of the ePortfolio throughout their college career and extending it into post secondary education and enhancing career opportunities.

Students started from a blank ePortfolio. They requested a template, which was provided. But they needed to adapt the template to the needs of the project. Once given the freedom to create their own "space," students took on the task of developing more than just a collection of artifacts. Their work became unique and reflective, incorporating digital technology with creativity and ingenuity. The ePortfolio allows each student to gather together his or her individual coursework and lend cohesiveness to it, even amid the student's separate encounters in various disciplines. Throughout the process, students engaged in reflective writing and discussions, which provided more than just personal reflection. Here, the students became the researchers developing ideas and strategies for future ePortfolio classes.

Starting with a goal of simply completing the assignment, the nine participants evolved into thoughtful agents using the projects to alter their perspective on themselves. Inspiring their instructor, the students were given the opportunity to become the developers, assisting in the research of new plans and structures and, in that respect, the project itself. The process was transformative. The project empowered the students by giving them a stake in the outcome and ownership over the results. Now fully student driven, this pilot is totally owned and operated by the student participants.

POSTER 67

The Effects of Cultural Lessons on Student Engagement

Jennifer Barlotta and Ashley Marino

Faculty Mentor: Dr. Judit Kerekes

Department of Education

Cultural lessons are of a greater interest to students when a personal connection is formed. Since St. Patrick's Day was approaching, we realized this was a great opportunity. As student-teachers of Public School 60 we incorporated the event into math and poetry lessons in the second and fourth grade classrooms. Our master teachers helped us develop a series of activities. Their experiences and our new ideas culminated in a project.

Cultural topics have a positive and lasting effect on student learning. St. Patrick's Day is celebrated on March 17th by people of all backgrounds in the United States. One does not have to be Irish in order to celebrate this holiday. Students of Irish descent had more prior knowledge but Irish and non- Irish decent students were eager to share their experiences, reading, and knowledge.

A student with Lucky Charm marshmallows created data for graph in cooperative learning groups by sharing thinking, listening, and solving problems. The problem offered the possibility for differentiated learning. They created their understanding on graph mode, medium and range in Lucky Charm context. The students shared and discussed their findings.

Limerick is a town in Ireland. A limerick is a poem with five rows in which the first, third and fifth rhyme with each other. The second and fourth lines also rhyme with each other. Students were thoroughly engaged, and eager to share their own limericks. We found as a result of our project that students who are involved and make personal connections have a deeper understanding of the subject matter. We found they remember and share with happiness their knowledge of a cultural event regardless of their personal heritage. Students do not learn merely from books; they construct their own knowledge at their own speed (Freudenthal) and shift their understanding to a higher level. (Piaget) Learners can create new ideas, but they need to interact in order to do so. (Vygotsky)

POSTER 68

Dental Health Care - Keep a Healthy Smile

Amanda Konzelman

Faculty Mentor: Dr. Judit Kerekes

Department of Education

Developing my understanding on the teaching and learning method was a long process. As a student teacher at Public School 60 I tried a special method. I chose a real life situation. The topic was dental health care. I enjoyed teaching and the students also seemed to have fun. I was able to incorporate math, science and literature. Before the lesson, some of the students knew the basics: to brush and floss. Now they have learned to: brush properly, using floss on a stick for easier flossing; use fluoride based toothpaste and mouth wash for less sensitivity; and to eat calcium rich foods such as dairy.

My confidence on the subject matter combined with a high degree of student interest helped to develop an open, trusting and friendly relationship with my students. On a daily basis they gained confidence to pose questions and learned from me. Classroom management became easier. The students were well behaved, involved with the lesson and almost jumped out of their seats to give answers. After class ended, students continued to be engaged and continued to ask questions about the lesson of the day.

I learned that a teacher's additional knowledge stimulates a student's interest in the subject matter, strengthens the student-teacher relationship, fosters freedom to pose questions, and facilitates effective classroom management. I wish to use this method one day in my own classroom. I may organize and prepare a fieldtrip and follow up with discussion. I learned from this experiment that if a teacher has real life experience to share with her students, then student learning and open-ended questioning occur. The knowledge students gain is internalized. In this case, the knowledge students gained with curiosity, interest, and happiness gave them a healthy smile to keep.

POSTER 69

Digital Alarm Clock

Jesse Goff

Faculty Mentor: Dr. Neo Antoniadou
Department of Engineering Science and Physics

A digital alarm clock was built and programmed from scratch by me to show the skills and knowledge I have gained as a student who graduated from the Electrical Engineering Technology program (AAS). It was developed for ENS 464, an embedded systems analysis and design class required to graduate in the program. The alarm clock was programmed with the SASM assembly language, and was built mostly from scrap.

It is fully programmable, reliable, and designed with user friendliness in mind. A fair amount of internal complexity has been incorporated to demonstrate my knowledge of circuitry and was not necessarily intended to be the most efficient in design. At the heart of the clock is a PIC18F452 microcontroller mounted on a slightly modified QwikFlash programming board interfaced through a daughter board. The clock (as well as its chassis) was constructed entirely by hand with minimal tools and without any outside assistance whatsoever.

POSTER 70

Correlating Tree Cores and Climate in New York City

Victoria Cooper, Sarah Edkins,
Peter Hannon and James Lynch

Faculty Mentor: Dr. Athanasios Koutavas
Department of Engineering Science and Physics

Venturing into the field of dendrochronology, we collected cores from oak trees on campus at the CUNY College of Staten Island, NY. Data from tree cores are often used to reveal the climate history of a region. We compared our data from CSI trees with NYC climate records, in search of climate trends.

We decided to test if trees on campus were strong indicators of climate change in the NYC region, focusing on temperature, drought, and precipitation trends. For both precipitation and temperature, the highest correlation was in the month of July, while the other eleven months seemed to have no impact on the growth of these trees. Precipitation is positively related to the growth of trees, meaning the more it rains, the more the trees grow. Temperature, on the other hand, has a negative relationship on the growth of trees. The hotter the temperature, the less the trees grow, probably because evaporation reduces available water. Overall, we learned that July is the most important month regarding the growth of trees. Summer is the main growing season of the trees so environmental factors are likely to have the most impact at this time. Our tree ring data indicated that trees fair better when there is greater precipitation. High temperatures and drought are undesirable and suppress the growth of the trees. In the future, an increasingly warm temperature trend may cause our oak trees to suffer. It is important to study trees now to reveal what can happen as climate changes.

Undergraduate Conference on Research, Scholarship, and Performance Alumni—Where Are They Now?

Anna Fiorentino graduated cum laude from CSI



and the CUNY Honors College with a Bachelor of Science in Biology/Bioinformatics in 2003. She received her Master of Science in Computational Biology, magna cum laude, from New Jersey Institute of Technology in 2004. Anna currently serves as a Level-2

Analyst at Memorial Sloan Kettering Hospital, and recently received word that she will be starting a PhD program this fall, specializing in Behavioral Medicine and Neuroscience. [Jennifer: would you please contact Anna and find out where she'll be working on her PhD?] Anna Fiorentino will begin her PhD program at Northeastern University this fall.

Conference presenter in 2003

Kristen Lindtvedt received a BA in Sociology/Anthropology from CSI in 2005, an MA in Teaching and Learning with Technology from Ashford University in 2009, and professional certification in Web and Multimedia Design from the Art Institute of Pittsburgh in 2008. She is currently employed at CSI with the Center for Excellence in Learning Technology within the CSI Library as a Multimedia Specialist and CSI Blackboard Administrator. Kristen is also an Adjunct Instructor for the CSC 225, a Web design class in the Computer Science Department.

Conference presenter in 2005 and 2006

Richard Pascale is a summa cum laude graduate



of the Macaulay Honors College at CSI, Class of 2007, with a Bachelor of Arts degree in Psychology. While working as a health educator in CSI's Peer Drop-In Center, he attended The City College of New York's graduate school program. In February 2010, he graduated

with a Master of Arts degree in Mental Health Counseling with a 3.857 GPA. His life goal is to earn the New York State license to practice as a mental health counselor and to open his own practice treating individuals in need of psychological therapeutic services. Richard is also a lifetime member of the Psi Chi National Honors Society in Psychology.

Conference presenter in 2007

Rachna Sondhi, who graduated from CSI with



a Bachelor of Science degree in Biochemistry in 2003, is currently in the MD/PhD program at SUNY Downstate Medical Center, and just recently defended her thesis in Neuroscience. Rachna has two years remaining in her program and is working in Psychiatry at the moment, but she is also thinking of pursuing a career in dermatology or ophthalmology.

Conference presenter in 2002 and 2003

Dmitry Volfson graduated from CSI and the



CUNY Honors College in 2002 with a Bachelor of Science degree in Biochemistry. He attended the New York College of Osteopathic Medicine from 2002 to 2006 and is currently completing his last year as Chief Resident in

Emergency Medicine at Long Island Jewish Medical Center. He will be starting at St. Vincent's Medical Center in Bridgeport CT this June as an attending physician in Emergency Medicine.

Conference presenter in 2002

Undergraduate Conference on Research, Scholarship, and Performance— Faculty Mentors

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Sociology, Anthropology and Social Work	Dr. Roslyn Bologh	31

Undergraduate Conference on Research, Scholarship, and Performance— Student Scholars

S T U D E N T	F A C U L T Y	D E P A R T M E N T
Kalpita Abhynkar	Dr. Alejandra Alonso	Biology
Joseph Adia	Ms. Louise Levine	English
Elhassan Ahmed	Dr. Deborah Sturm	Computer Science
Meriem Hadj Ahmed	Dr. Alejandra Alonso	Biology
Michael Aiello	Dr. Shuiqin Zhou	Chemistry
Eugenia Alaniz	Dr. Alejandra Alonso	Biology
Justin Allen	Dr. Susan Imberman	Computer Science
Diana Almodovar	Dr. Patricia Brooks	Psychology
Christabel Amadi	Dr. Roslyn Bologh	Sociology, Anthropology and Social Work
Alan Aurelia	Dr. William Bauer	Performing and Creative Arts
Vivienne Baldassare	Dr. Charles Liu	Engineering Science And Physics
Mark Barahman	Dr. Alan Lyons	Chemistry
Jennifer Barlotta	Dr. Judit Kerekes	Education
Peter Buratti	Dr. Darryl Hill	Psychology
Catherine Caesar	Dr. Elena McCoy	Biology
Jenna Calderon	Dr. Athanasios Koutavas Dr. William Bauer	Engineering Science And Physics Performing and Creative Arts
Megan Caldwell	Dr. Benjamin Kest	Psychology
Shalini Camillus	Dr. Alejandra Alonso	Biology
Michael Constantino	Dr. Susan Imberman	Computer Science
Victoria Cooper	Dr. Nuria Morgado Dr. Athanasios Koutavas	Modern Languages Engineering Science and Physics
Christopher Corbo	Dr. Alejandra Alonso	Biology
Amanda Couso	Ms. Louise Levine	English
Christina M. Cuttitta	Dr. William L'Amoreaux	Biology
David J. Danischewski	Dr. Florette Cohen	Psychology
Shawon Debnath	Dr. Jimmie Fata	Biology
Eric DeMaso	Dr. Susan Imberman	Computer Science
Meagan Derbyshire	Dr. Alan Lyons	Chemistry
Dmitriy Dubson	Dr. Louis Petingi	Computer Science
Dwight Dunkley	Dr. Ming Xia	Political Science, Economics and Philosophy
Sarah Edkins	Dr. Athanasios Koutavas	Engineering Science and Physics
Daniel Feldman	Dr. Charles Liu	Engineering Science And Physics
James Fletcher	Dr. William Bauer	Performing and Creative Arts
Patricia Gaja	Dr. Bertram Ploog	Psychology

Grigoriy Gelfand	Dr. Fred Naider	Chemistry
STUDENT	FACULTY	DEPARTMENT
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The committee gratefully acknowledges the contributions of the many individuals who helped make this conference possible.

