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OPENING NIGHT SPEAKER

Monday
March 14, 2005
5:00 PM
Donahue Auditorium
Dolan Center for Science & Technology

PHOTOS OF THE YANGTZE & EXPLORATIONS OF RURAL CHINA BY LINDA BUTLER

Linda Butler will speak on the creative experience in photographing the rural areas of China affected by the Three Gorges Dam project on the Yangtze River. The project involved eight separate trips over a three year span to capture the changing landscape wrought by the dam. Her spectacular photographs and narrative are published in *Yangtze Remembered*.

In 1993, the University inaugurated the annual Mitsui Distinguished Lecture with the support of the Mitsui USA Foundation and the Cleveland office of Mitsui & Co. (USA), Inc. The lecture is coordinated by the East Asian Studies Program and co-sponsored with the Environmental Studies Concentration at John Carroll University.



CELEBRATE THE ARTS AT LUNCH

Monday, Tuesday & Thursday

March 14, 15, 17, 2005

12:15 to 1:00 PM

Lombardo Student Center Atrium



ARTISTIC EXHIBITS

Tuesday, March 15 (5:30-6:30)

❖ **“Meet the Artists”**

Artistic Exhibit Reception

Grasselli Library Lobby

Wednesday, March 16 (12:15-1:30 PM)

❖ **Course Development Presenters Lunch**

Dolan Center Conference Room, #A202

RSVP to Loretta at x1781, lwing@jcu.edu

Thursday, March 17 (Noon-1:30 PM)

❖ **IRB & IACUC Open House & Lunch**

Administration Building, Faculty Lounge

Drop in between 12-1:30 for an informal discussion.

RSVP to Cathy at x4520, canson@jcu.edu



SCHEDULE OF EVENTS

MARCH 14-18, 2005

All events open to the public and
are free unless noted.

Schedule is subject to change.
Visit our website for updates:
www.jcu.edu/research/celebrate

Monday, March 14, 2005

- | | |
|---------------|--|
| All Week | Art Exhibits
<i>Grasselli Library Lobby</i>
<i>Rodman Hall Meeting Room B</i>
<i>Dolan Reading Room</i> |
| 12:15-1:30 PM | Arts at Lunch
<i>Lombardo Student Center Atrium</i> |
| 3:15-4:45 PM | Faculty Research Reception
<i>Dolan Center, Reading Room</i>
Sponsored by the Academic Vice President &
the Academic Deans
By invitation only |
| 5:00 PM | “Photos of the Yangtze & Explorations of Rural
China”
Linda Butler
<i>Dolan Center, Donahue Auditorium</i>
Reception follows |



SCHEDULE

Tuesday, March 15, 2005

- 12:15-1:30 PM Arts at Lunch**
Lombardo Student Center Atrium
- 3:30–5:00 PM Opening Faculty Presentations**
Dolan Science Center: A202
(1) Dr. Paul Lauritzen: "Development of Two New Courses to Strengthen the International Component of the Curriculum" (Grauel Funded)
(2) Dr. Thomas Nevin: "Bio-critical study of Saint Theresa of Lisieux" (Grauel Funded)
(3) Dr. Linda Eisenmann: "*Father Knows Best?* Expectations for Women in Post-World War II America"
(4) Dr. Mary Beadle: "Martha Rountree: Creator of *Meet the Press*"
- 4:00–5:00 PM General Poster Session**
Dolan Atrium
[See page xxx for list of presenters & abstracts)
- 5:30–6:30 PM “Meet the Artists”**
Grasselli Library Lobby
Refreshments

Wednesday, March 16, 2005

- 10:00–11:30 AM Panel/Paper Presentation A**
Dolan Science Center: A202
Moderator: Dr. Lauren Bowen, Political Science
(A.1) Amber Thomas: "Creating Value through Market Orientation"
(A.2) Wesley Johansen: "Haruki Murakami and the Individual"
(A.3) Cara Nikolajski, Calli Ensor, Mary Pat Pavicic, Lauren Smith: "The Biological and Cultural Aspects of Disease: Ebola in Africa"



SCHEDULE

(continued) **Wednesday, March 16, 2005**

(A.4) Nelson Foster: "Contemporary Corporate Crime: Theoretical Perspectives, Cases & Consequences"
(A.5) Monica Colon: "Diversity at Nationwide Insurance Enterprise: A Case Study of a Fortune 500 Company"

10:00-11:30 AM
(continued)

Paper/Panel Session B:

Dolan Science Center: A203

Moderator: Dr. Jeanne Colleran, English

PANEL: Theatre as Cultural Criticism: Recent Political Plays

(B.1) Wally Stepanek: "Player and Played: Hustling for a Living in Suzan Lori Parks' Topdog/Underdog"

(B.2) Brienna Rowles: "Claiming Clones: Caryl Churchill's A Number"

(B.3) William Shutes III: "Re-approaching the Millennium: Angles in America"

(B.4) Dr. Jeanne Colleran: "Disappearing Acts: Theatrical Responses to the Gulf Wars"

12:00—1:00 PM

Course Development Lunch

Reservations Required

1:30—3:00 PM

Paper/Panel Session C:

Dolan Science Center: A202

Moderator: Sr. Mary Ann Flannery, Communications

PANEL: Ethical Concerns as Related to Contemporary Media

(C.1) Christine Lewton: "The Social Responsibility Theory: A Look from the Past to the Present"

(C.2) Maria Meyer: "The Mass Media: Are Employment Practices Biased?"

(C.3) Matthew Jaworski: "The Hutchins Commission and Media Consolidation"

(C.4) Andrea Bozek: "The FCC's Role in Regulating Indecency: Is Indecency Covered by the First Amendment?"

(C.5) Elise Deramo: "An Assessment of Fox News: Is it Fair & Balanced?"



SCHEDULE

Wednesday, March 16, 2005 (continued)

1:30-3:00 PM
(continued)

Paper/Panel Session D:

Math & Computer Science Conference Room, E244

Dolan Science Center

PANEL: Race & Racism

Moderator: Dr. Dianna Taylor, Philosophy

(D.1) Meredith Block: "Not Your Typical College Experience"

(D.2) Nate Szabo: "Conceptions of Race in Media"

(D.3) Brittany Mullen: "The Adverse Effects of Race & Its Meaning of Dishonor"

1:30-3:00 PM
(continued)

Paper/Panel Session E:

Psychology Conference Room, E342

Dolan Science Center

Moderator: Dr. Sharon Kaye, Philosophy

PANEL: The Carroll-Cleveland Philosopher's Program

Presenters: Dr. Jennifer Merritt, Education; Dr. Sharon Kaye & Dr. Paul Thomson, Philosophy; Dr. Robert

Prisco, Communications; Ms. Roslyn Smith-Crumb; Dan Matusicky, Zach Miller, Linda Kawentel, Rhiannon Lathy, undergraduates

1:30-3:00 PM
(continued)

Paper/Panel Session F:

Dolan Science Center: A203

Moderator: Dr. Benjamin Forbes, Management, Marketing & Logistics

(F.1) Christopher Zeppenfeld: "The Poetic Elements of a Hip Hop Website"

(F.2) James E. Menhaus: "Jesuit Education at John Carroll University: A Student's Perspective"

(F.3) Jason Patch: "Market Efficiency & Investing Strategies"

(F.4) Christopher Zeppenfeld: "The Ohio Upsilon Chapter of Sigma Phi Epsilon's Website"

(F.5) Andrew Fernandez: "Philosophy of Mind: Eliminative Materialism is the New Black"



SCHEDULE

(continued) **Wednesday, March 16, 2005**

3:30-5:00 PM

Paper/Panel Session G:

Dolan Science Center: A202

Moderator: Dr. Edward Peck, The Graduate School

(G.1) Adrienne D'Angelo: "Art & Architecture of Medieval Venice: Islamic Impact & Cultural Convergences through the Mouth of the Grand Canal"

(G.2) Molly Connaughton: "Increasing Inner-City Parental Participation in School Conferences"

(G.3) Dr. Simran Kahai: "Accounting Rates in International Telecommunications: The Empirical Evidence"

(G.4) Dr. Richard Hendrickson: "Published E-mail Addresses: Practices & Perceptions of the Impact of the Impact on Credibility"

3:30-5:00 PM

(continued)

Paper/Panel Session H:

Dolan Science Center: A203

Moderator: Megan Moore Gardner, Student Affairs

(H.1) Charles Carfagna & Sara Conry: "Preparation & Characterization of Pd(II) Complexes of an F-19 NMR-Reporter Ligand"

(H.2) Dr. Man Lung Desmond Kwan: "Green Chemistry: Science with a Conscience"

(H.3) Dr. James Lanese: "Establishing Problem-Solving Habits in Introductory Science Courses"

(H.4) Dr. Greg DiLisi: "Got Milk? Determining Fat Concentration of Milk through Beer-Bouguer-Lambert Light Scattering"

3:30-5:00 PM

(continued)

Paper/Panel Session I:

Psychology Conference Room, E342

Dolan Science Center

Moderator: Dr. Phyllis Brady Harris, Sociology

PANEL: Social Issues & Health

(I.1) Emily Spencer, Koli Stefanos: "Voices of Teenage Pregnancy: A Closer Look into the Lives of Teen Parents"



SCHEDULE

Wednesday, March 16, 2005 (continued)

- (I.2) Nina Dambrosio: "Factors Leading to the Recent Classification of Seasonal Affective Disorder as a Distinct Psychological Condition and Practices Developed to Treat It"
(I.3) Meredith Block: "Examining Obesity and Diabetes Risk in Women and Preschool Children"

7:00-8:30 PM **Science & Mathematics Poster Session**
Muldoon Atrium; Dolan Science Center
Refreshments
See page xxx for presenters and abstracts.

Thursday, March 17, 2005

10:00-11:30 PM **Paper/Panel Session J:**
Dolan Science Center: A202
Moderator: Dr. Gerald Weinstein, Accountancy
(J.1) Thomas Jenkins: " 'To the Finest Cause...The Liberation of Mankind': Alfred Wagenknecht and his Journey through the American Left"
(J.2) Dr. Charles Zarobila: "Chesterton's Graphic Humility"
(J.3) Dr. Helene Sanko: "Impressions of a French River: The Seine"

12:00-1:15 PM **Meet the IRB & IACUC**
Faculty Lounge
Reservations required

12:15-1:30 PM **Arts at Lunch**
Lombardo Student Center Atrium



SCHEDULE

Thursday, March 17, 2005 (continued)

1:30-3:00 PM

Paper/Panel Session K:

Dolan Science Center: A202

(K.1) Latrice Edwards: "Moral and Religious Issues of Death in the African American Community"

(K.2) Nate Szabo: "Blueprint for the Future: A Green Anarchist Utopia"

(K.3) Dr. Martha Pereszlenyi-Pinter: "Cat-Chat: Nine Lives of the Fantastique French Feline - Cats in French Literature & Culture"

1:30-3:00 PM
(continued)

Paper/Panel Session L:

Dolan Science Center: A203

Moderator: Dr. James Swindal

PANEL: Student Activism: The Reasons Behind the Action

Participants: Tom Pieragastini, Tiffany Kenison (CWRU), and Dana Dombrowski

3:30-5:00 PM

Paper/Panel Session M:

Dolan Science Center: A202

Moderator: Dr. Jennifer Cutler Merritt, Education & Allied Studies

PANEL: JCU Students Teach Human Rights Lessons to Local Middle School Children

Presenters: ED 350/453 students

3:30-5:00 PM
(continued)

Paper/Panel Session N:

Dolan Science Center: A203

Moderator: Dr. Susan Long, Sociology

PANEL: Visual and Popular Culture

(N.1) Maura McCafferty: "Pictures of a Divided Society: The Walls Murals of Northern Ireland"

(N.2) Katheryn Chrzanowski: "Japanese Fashion: From the Traditional to the Trendy"

(N.3) Franklin P. Blazunas: "Kurosawa Akira and the Eastern-Western"



SCHEDULE

Friday, March 18, 2005

10:30-11:30 PM Paper/Panel Session O:
Math & Computer Science Conference Room, E244
Dolan Science Center
Moderator: Dr. Krystyna Nowak-Fabrykowski, Education & Allied Studies
PANEL: Caring: Multiple Meanings, Promising Practices & Compelling Challenges
(O.1) Dr. Tom Kelly: "Dilemmas of Caring"
(O.2) Dr. Nowak-Fabrykowski, Fred Buchstein, Kristen Fazio: "Caring for Foster Children"
(O.3) Dr. Jennifer Merritt: "Assessing the impact of justice-related teaching & learning experiences on the personal and professional choices of pre-service teachers"
(O.4) Dr. Thea Ford: "Activities designed to facilitate the development of dispositions in accord with NCATE standards"
(O.5) Dr. Nancy Taylor: "The role of school counselors in creating a climate of caring"

10:30-11:30 PM Paper/Panel Session P:
(continued)
Psychology Conference Room, E342
Dolan Science Center
Moderators: Sue Shick, FTIC & Dr. Paul Nietupski, Religious Studies
PANEL: Religion, Art & Politics in Medieval South & Southeast Asia: An Internet Learning Tool
Participants: Kristin Arbut, Julie Klemens, Jonathan Mis, Justin Ragor, Joe Gilchrist





SCHEDULE



PAPER & PANEL ABSTRACTS

Opening Faculty Presentations:

"Father Knows Best? Expectations for Women in Post-World War II America"

Dr. Linda Eisenmann, Dean, College of Arts & Sciences

Our understanding of the post-World War II era for American women is often colored by stereotypes from magazines and television depicting a dreary milieu for women seeking educational or professional advancement. But, did such notions determine women's actual behavior? And, to what extent were expectations affected by class and race? This paper explores four ideologies surrounding postwar women's experience, as well as ways in which some women countered them: patriotic expectations to serve their country by defending the home, economic demands to cede jobs to men and to treat their own work as intermittent, cultural notions advancing domesticity, and psychological reliance on Freudian notions of biology and motherhood. Although many women and men acknowledged the value of these expectations, they also circumvented them when personal or family situations suggested other avenues. The discussion is part of a larger project on postwar American higher education.

(A.1) "Creating Value through Market Orientation"

Amber Thomas, Undergraduate;

Faculty Sponsor: Sophie M. Romack, MML

A theoretical presentation of market orientation as perceived by field experts; how an implementation of this strategy of exceeding customer expectations by maintaining organizational objectives sets firms apart from others. An exploration of specific elements that firms exhibit which help to enhance value for their customers through market orientation such as culture and business practices. Also a practical examination of example firms whose commitment to customer service and company values have led them to the top. Funded by STARS.

(A.2) "Haruki Murakami and the Individual"

Wesley Johansen, Undergraduate;

Faculty Sponsor: Dr. Long, Sociology

Haruki Murakami is one of the leading authors in contemporary literature. He has won Japan's top award for writers. Readers love his offbeat characters and humorous style with which approaches serious themes. Whether writing about World War II or cooking spaghetti, Murakami consistently creates compelling worlds where the supernatural is not out of place and allusions to pop culture are omnipresent. Consistent throughout all his stories are protagonists who are loners, withdrawn and ignored. Yet they never complain and are content to be individuals. Given the belief that Japanese society discourages being unique, why is Murakami so successful? Is there a desire within Japan to reject conformity which westerners



PAPER & PANEL ABSTRACTS

fail to see? Using Murakami's work it is possible to explore the relationship between Japan's manifestations of nationalism and the author's conflicting ideas.

(A.3) "The Biological and Cultural Aspects of Disease: Ebola in Africa"

Cara Nikolajski, Calli Ensor, Mary Pat Pavicic, Lauren Smith, Undergraduates
Faculty Sponsor: Dr. Long, Sociology

In the United States, medical researchers have a better understanding of the biological disease process of Ebola; however, in locations, such as rural Africa where the disease is a greater threat, much of this knowledge is lacking. The purpose of this paper is to study how Ebola is viewed in rural Africa, particularly the Acholi in Uganda, in comparison with the United States. Cultural and traditional healing practices, burial methods, spiritual beliefs, and subsistence systems all combine to form the explanatory models adopted by the people of Africa. By understanding the belief systems of the Acholi, medical researchers in the United States are better able to implement more effective methods of treatment and prevention without undermining their world view.

(A.4) "Contemporary Corporate Crime: Theoretical Perspectives, Cases & Consequences"

Nelson Foster, Undergraduate;
Faculty Sponsor: Dr. Chirayath, Sociology

The social, political, and economic effects of globalization are manifest in modern society in innumerable ways. A central impetus behind this process is the development and proliferation of multinational corporations - large conglomerates that foster increased economic interconnectedness. While much has been said about how we live in an increasingly global society, suggesting the benefits of globalization, an alternative viewpoint criticizes globalization as a 21st century variant of colonization. Indicators of this new division of labor and movement of capital are evident in empirical data that differentiates rich and poor nations. Multinational corporations, by definition, owe no allegiance to any governing body other than their shareholders, operating with virtually no regulation, giving rise to patterns of corporate deviance, as illustrated the five case-studies of this research project.

(A.5) "Diversity at Nationwide Insurance Enterprise: A Case Study of a Fortune 500 Company"

Monica Colon, Undergraduate;
Faculty Sponsor: Susan Finnerty, Management, Marketing & Logistics

All companies should have a set plan to implement and embrace diversity but that is not the case in today's workplace. Although there are some companies that are not prepared for this new wave of diversity, there are many companies that are preparing themselves for this in many ways. One of these companies is Nationwide



PAPER & PANEL ABSTRACTS

Insurance Enterprise. They have been preparing their employees since 1994 for the diversity that is coming ahead. Although their diversity plan and training has changed from year to year their goal and mission have stayed the same. In my presentation, I will take a look at how this Fortune 500 insurance company has been so successful in their diversity plan. I will even take a closer look at how they transformed one of their newest partners Victoria Insurance Group to be one of the most diverse offices in the Cleveland, OH area.

(B.1) "Player and Played: Hustling for a Living in Suzan Lori Parks' *Topdog/Underdog*"

Wally Stepanek, Graduate Student; Faculty Sponsor: Dr. Collieran, English
Parks's play resonates with Athol Fugard's similarly-scripted tale of two brothers, confined to a small room and about to squander their savings. Parks, however, wants to represent more than the paradigmatic outlines of intimacy and domination and, unlike Fugard, what her brothers squander is capital without real buying power. Within this untrackable system of ploy, deception, and disappearance, Parks' provides an analogy to American myths of opportunity, happiness and self-realization. Whether hustling lemonade, imitating historical figures in penny arcade booths, cheating tourists with card tricks, or cheating brothers out of their last nickel, there are no possibilities for the black men in Parks' America outside realms of imitation, mimicry, pretense, and cheating. What kinds of authenticity - of selfhood, of reciprocal relations - can be attained in a system defined by mere performance and commodified selves meant merely to amuse.

(B.2) "Claiming Clones: Caryl Churchill's *A Number*"

Brienna Rowles, Graduate Student

Faculty Sponsor: Dr. Collieran, English

British dramatist Caryl Churchill is celebrated for a restless experimentalism, a profoundly-realized visual imagination, and a willingness to engage with complex social issues. Yet, for as wide-ranging as Churchill's dramatic sensibilities are some common elements, thematically and dramaturgically, can be identified. Chief among these are Churchill's concern about the social inscription of identity and her exploration of identity and historicity through techniques of doubling. Churchill's most recent work, *A Number*, uses and extends these concerns and techniques, but in a drastic reformulation. The simplicity of the play's design allies with the limitless possibilities of alternative relationships and allows *A Number* to raise questions about identity, knowability, motivation, normalcy, responsibility, intimacy, and environment. Is such a vision—of individual growth completely but productively severed from family nurturance—radically consoling or alarmingly dystopic?



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(B.3) "Re-approaching the Millenium: Angels in America"

Willam Shutes III, Graduate Student

Faculty Sponsor: Dr. Colleran, English

Ten years after its stunning premiere, and its replication in theatres across America, does Tony Kushner's epic drama, *Angels in America* continue to have relevance for the American public? Emphatically set in the mid-Eighties during the Reagan presidency, the play's historical moment originally overlapped the actual moment of its performance; the imaginative time of the play stretched into the real time of the audience's experiences of the political events so compelling depicted, giving the play a strong sense of immediacy and urgency. Now that the actual time between the events of the play and the present moment of performance has lengthened the question arises: does *Angels in America* still offer insight into that beset community in America? What is the status of its prophetic utterances? Which have been dystopically realized? Which fallen into irrelevance? Which, outstripped by other historical formations, have ranged beyond the play's visionary scope?

(B.4) "Disappearing Acts: Theatrical Responses to the Gulf Wars"

Dr. Jeanne Colleran, English

The title of this paper, "Disappearing Acts" refers both to the new technologies of visibility and to the collapse of critical judgment associated with politicized art. In the first portion of my paper, I describe how the rapid innovations of media and information technologies has affected the presentation of current political crises. This discussion is indebted to Baudrillard, Debord, and Sontag's discussions of a spectacularized society. The second half of the discussion focuses on the compensatory strategies devised by politicized art, particularly theatre.

(C.1) "The Social Responsibility Theory: A Look from the Past to the Present"

Christine Lewton, Undergraduate;

Faculty Sponsor: Sr. Flannery, Communications

After WWII, the Hutchins Commission formed and created the Social Responsibility Theory to create an ethical system for the media to relate news to their audiences in a clear format. However, in a journalist's eyes this theory was unacceptable and violated their freedom of rights. Journalist's believed the policy was inaccurate in helping the media and put more restrictions on how the truth should be told rather than allowing the whole truth to be recognized. As a result, due to the progression and change of times, the Social Responsibility Theory would not be effective today. More efficient methods, such as following a code of ethical principles and the First Amendment are how journalists maintain accuracy in the media and truth for the public.



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(C.2) “The Mass Media: Are Employment Practices Biased?”

Maria Meyer, Undergraduate

Faculty Sponsor: Sr. Flannery, Communications

(C.3) “The Hutchins Commission and Media Consolidation”

Matthew Jaworski, Undergraduate; Sponsor: Sr. Flannery, Communications

The relationship between the Hutchins Commission and media consolidation was investigated. The Hutchins Commission is based on communitarian ethics, while media mergers rely on libertarian ethics. Evidence showed that media corporations have not only gone out of their way to prevent the public from learning about changes in laws that created such mergers, but the consolidation of such companies decreases competition. Due to these mergers, the media will often show favoritism to their parent corporations. The evidence suggests media companies do not conform to the Hutchins Commission when they consolidate.

(C.4) “The FCC’s Role in Regulating Indecency: Is Indecency Covered by the First Amendment?”

Andrea Bozek, Undergraduate

Faculty Sponsor: Sr. Flannery, Communications

The Federal Communications Commission, established in 1934, has traditionally refrained from regulating programming based on content. This role has changed due to public outcry after Super Bowl XXXVIII halftime show. The FCC was pressured by Congress to regulate and fine broadcasters who promote indecent programming. Due to the nature of the Howard Stern Show, it was subjected to FCC regulations. Clear Channel Communications buckled to the pressure of a proposed congressional bill to increase fines for indecency programming and dropped Stern from six markets. While Howard Stern has been a controversial figure for years, his recent criticism of President Bush has given another cause for the Republican controlled FCC and Clear Channel Communications to silence him. The FCC, unaffected by Supreme Court rulings, has decided that regulating what is best for the American people is their responsibility.

(C.5) “An Assessment of Fox News: Is it Fair & Balanced?”

Elise Deramo, Undergraduate

Faculty Sponsor: Sr. Flannery, Communications

(D.1) “Not Your Typical College Experience”

Meredith Block, Undergraduate

(D.2) “Conceptions of Race in Media”

Nate Szabo, Undergraduate;



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(D.3) "The Adverse Effects of Race & Its Meaning of Dishonor"

Brittany Mullen, Undergraduate

In our panel discussion, we will be talking about different aspects of race relations that we learned in the Philosophy Course Race and Racism. Conceptions of Race in Media will specifically be looking at the work of Loury and how it relates to the media. By relating Loury to Trading Places, one will be able to see the media uses stereotypes that are present in society today.

Faculty Sponsor: Dr. Taylor, Philosophy

(E) "The Carroll Cleveland Philosophers' Program"

Dr. Jennifer Merritt, Education; Dr. Sharon Kaye & Dr. Paul Thomson, Philosophy; Dr. Robert Prisco, Communications; Ms. Roslyn Smith-Crumb; Dan Matusicky, Zach Miller, Linda Kawentel, Rhiannon Lathy, Undergraduates

The Carroll-Cleveland Philosophers' Program has taken various forms since its inception six years ago. This semester, we are offering a course called "Philosophy and Enrichment" for forty-five inner-city high school students. The class meets every Friday. In the morning, the students gather in small groups to study philosophical concepts such as love, art, truth, and justice; in the afternoon, they apply these concepts through various enrichment activities. The culminating project for the semester is a video-magazine, created largely by the students, to document their philosophical journey. Our objective is to teach students how to disagree in a productive way concerning values. This requires students to become informed, express themselves, listen to others, explore alternatives, and consider modifying their views. We are evaluating the effectiveness of our curriculum through a qualitative study of student participation. In particular, we are monitoring improvement in response to thought experiment, drama, and writing exercises.

(F.1) "The Poetic Elements of a Hip Hop Website"

Christopher Zeppenfeld, Undergraduate

Faculty Sponsor: Dr. Rosenthal, English

Tracing its roots from the songs and chants of African tribes, the lyrics from rap music are some of the most predominant forms of poetry heard today. From old-school rappers like Grandmaster Flash and Big Daddy Kane to the modern day lyricists like Mos Def, Talib Kweli, and Jay-Z, rap lyrics encompass many of the technical aspects of what we call poetry today. The public website will act as a teaching tool for professors to give students an alternative way to study and learn the concepts of poetry. It will be highly interactive with the user, with plenty of audio clips, lyrics, and resources available for the user's navigation. The site will focus on how rap lyrics encompass many literary elements found in normal textual poems, as well as give background information about the hip hop culture.



PAPER & PANEL ABSTRACTS

(F.2) “Jesuit Education at John Carroll University: A Student’s Perspective”

James E. Menkhous, Graduate Student, Religious Studies

In understanding of the mission and identity of a Jesuit institution has become increasingly important during the past decade. Especially in areas of higher education, teachers and students wrestle with what it means to teach and learn at a Jesuit university. Fr. Peter-Hans Kolvenbach, S.J., the Superior General of the Jesuits, has given many addresses on Jesuit education in the United States, including his address at Georgetown University in June 1989 and at Santa Clara University in October 2000. These addresses help to shape the mission of a Jesuit institution of higher learning and offer insights into what it means to be a Jesuit university. This paper will present my own perspectives and other students' reactions to the implementation of these themes of Jesuit education at John Carroll University .

(F.3) “Market Efficiency & Investing Strategies”

Jason Patch, Undergraduate;

Faculty Sponsor: Dr. Soper, Economics & Finance

The New York Stock Exchange, as well as other financial markets around the world, is defined by an overwhelming amount of activity and information. Secondary markets are comprised of a number of different structures including direct search markets, brokered markets, dealer markets, and auction markets. Instruments of trade range from money market instruments to various derivatives. The trends in the market sometimes baffle even its most avid of followers. All of these characteristics reveal the ever-changing nature and the depth of financial markets. The foundation for my research was a book called *A Random Walk Down Wall Street* by Burton G. Malkiel. From this text, I gained insight on stock market efficiency and their role in the investing strategies of some of the best known investors in the world including Peter Lynch and Warren Buffet.

(F.4) “The Ohio Upsilon Chapter of Sigma Phi Epsilon’s Website”

Christopher Zeppenfeld, Undergraduate

On April 9, 2005 , the 43 men will achieve a goal that has been four years in the making, becoming an officially chartered chapter of the Sigma Phi Epsilon Fraternity. During this chartering process, Christopher Zeppenfeld has created the fraternity's website and subsequent Blackboard sites from scratch. The website is still a work-in-progress, but by its completion, it will have full database functionality, Flash slideshows, downloadable media, and an online application system for applicants of the 2005 Balanced Man Scholarship to apply for the scholarship for the first time in its history online.



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(F.5) "Philosophy of Mind: Eliminative Materialism is the New Black"

Andrew Fernandez, Undergraduate

Faculty Sponsor: Dr. Gunderson, Philosophy

Some areas in the Philosophy of Mind find difficulty establishing claims about human consciousness independent of biological evidence. It is tempting to say that the entity that we refer to as the "mind" does not actually exist. Proponents of this view commonly claim that when we refer to the "mind" what we are actually referring to is the "brain". As we learn more of the material world, it is no longer necessary to posit claims that reference an elusive dualism. With the advancement of neuroscience in the 20th and 21st centuries, the reductionist tendency has become dogmatic practice in many academic circles. It is in opposition to this view that I defend the notion that descriptions of the mind are always phenomenal interpretations and should be treated as such.

(G.1) "Art & Architecture of Medieval Venice: The Islamic Impact & Cultural Convergences through the Mouth of the Grand Canal"

Adrienne D'Angelo, Graduate Student

Faculty Sponsor: Dr. Guest, Art History

Venetian culture during the late Middle Ages, 1200-1500, thrived in colonialism along the Mediterranean. The Republic established a flourishing trading partnership with Byzantium that stretched even further into the Islamic world. The multi-faith cities of the Islamic world impacted the predominantly Christian city of Venice with a migration of forms and color. This paper will discuss the naturalization of Islamic artistic ideas into the cityscape and culture of Venice during the Middle Ages and Early Renaissance. Through a chronological lens, the aim of the discussion will focus on the impact of Islamic object's d'art, textiles, illuminated manuscripts and architecture in terms of initial reception and subsequent translation. Venice reinvented its cultural identity during the Middle Ages, and the boundaries between cultures became obscure. The developing city emerged as a breeding ground of multi-cultural and multi-faith dimensions radiating off the city on water.

(G.2) "Increasing Inner-City Parental Participation in School Conferences"

Molly Connaughton, Graduate Student

Dr. Lisa Shoaf, Education & Allied Studies

Teachers and administrators alike often struggle with the issue of parental involvement. While events such as Open House and Parent Teacher Conference Night are hosted to encourage home involvement, low turnout at these events often discourages school personnel. Many teachers believe that by strengthening the home-school connection, they can increase the success of their students. Thus the question remains how to increase parental participation at informational school events. As the 8th Grade English teacher and 8th Grade Chair at Horizon Science Acad-



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emy, I led my team of teachers in increasing parental turnout at Conference Night by over forty percent. This presentation explains the methods that were used and the results, as well as suggestions for teachers and administrators interested in increasing their own turnout.

(G.3) “Accounting Rates in International Telecommunications: The Empirical Evidence”

Dr. Simran Kahai, Economics & Finance

The international telephone carrier that carries a call from its home country to a foreign country must pay a fee to the foreign carrier for terminating the call in that country. Historically, this accounting rate is set above marginal cost of terminating international calls. Due to increased competition in more liberalized countries, the price of international telecommunication call in these countries has decreased significantly. That, in turn, has increased the outgoing traffic from more competitive (low-price, high-income) countries relative to incoming traffic from less competitive (low-income, high-price) countries. As a result, high income countries are faced with huge settlement payments going to low-income countries. Some governments in low-income countries have chosen to ignore the benefits of lower prices for their consumers and have supported the high accounting rates and high settlements payments surplus transferred to these countries. This paper identifies factors that are important in determining these accounting rates and evaluates the role of governments in influencing accounting rates.

(G.4) “Published E-mail Addresses: Practices & Perceptions of the Impact of the Impact on Credibility”

Dr. Richard Hendrickson, Communications

An online survey of reporters and editors describes experiences with and perceptions about the practice of publishing e-mail addresses for the reporters with articles. The author finds 30% of reporters responding regard the practice as “extremely useful” and about as many more see it as “quite useful” to their work, and that 69.4% of reporters and 69% of editors who replied see it as a means to improve the credibility of newspapers.

(H.1) “Preparation & Characterization of Pd(II) Complexes of an F-19 NMR-Reporter Ligand”

Charles Carfagna & Sara Conry, Undergraduates

Faculty Sponsor: Dr. Kwan, Chemistry

The versatility of organopalladium pincer complexes in catalytic organic syntheses has attracted great attention. Although most studies have been focused on their catalytic applications, mechanisms of many catalytic processes using such complexes have yet to be clarified. We have synthesized a new set of Pd(II)



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bis(phosphinite)-pincer ^{19}F NMR-reporter complexes shown below for $X = \text{Tfa}, \text{Cl}, \text{Br}, \text{I}$. The aryl- ^{19}F NMR signal should provide useful metrics (chemical shifts and coupling constants for correlation with catalytic activity and selectivity and in mechanistic studies of these organic transformations. Halide-metathesis equilibria have been monitored by ^{19}F and ^{31}P NMR. Complexes $[(\text{F-pincer})\text{P}^{\text{f}}\text{L}] + \text{JPF 6}$ for $\text{L} = \text{AsPH 3}$ and py , have been prepared in good yield by treating the Pd-Cl species with TIPF 6 . Activation energies for dissociation of L have been measured by Electrospray-Ionization Infrared Multiphoton Dissociation Ion Cyclotron Resonance.

(H.2) “Green Chemistry: Science with a Conscience”

Dr. Man Lung Desmond Kwan, Chemistry

Green chemistry is a new science frontier. It is elegant by design. It is defined as the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture, and application of chemicals. Green chemistry also focuses on the “Three R’s” – Recovery, Reuse/recycling, and Regeneration. Come and allow us to share what we have done in this endeavor on JCU campus.

(H.3) “Establishing Problem-Solving Habits in Introductory Science Courses”

Drs. James Lanese & Gregory A. DiLisi, Education; Jennifer Freeman, and Patricia Padovan

Students crave problem-solving strategies that promise increased achievement on tests. This seems to align with teacher goals, yet students resist using these strategies for various reasons. We seek to establish a pedagogy modifying student behavior so they are more likely to use any strategy a teacher deems useful.

(H.4) “Got Milk? Determining Fat Concentration of Milk through Beer-Bouguer-Lambert Light Scattering”

Dr. Greg DiLisi, Colleen M. Winters, John Carroll University; Lori A. DiLisi, Parker Hannifin Corporation - Nichols Airborne Division, Elyria, OH; Kristina M. Peckinpugh, Beaumont School for Girls, Cleveland Hts., OH

Given the wealth of natural phenomena that is explained by light scattering effects, the motivation behind this article is to create an inexpensive light scattering experiment that can easily be incorporated into both undergraduate and secondary-level laboratories. Our experiment applies the Beer-Bouguer-Lambert light scattering law to a series of milk specimens in order to determine the fat concentration of the various samples. Our experiment allows students to visualize basic light scattering geometries and to analyze data with accompanying error reduction. The historical development of the Beer-Bouguer-Lambert light scattering law, its numerous practi-



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cal applications, and the ensuing in-class discussions involving the milk specimens certainly elicit an enthusiastic response from both teachers and students.

(I.1) “Voices of Teenage Pregnancy: A Closer Look into the Lives of Teen Parents”
Ashley Fink, Sarah McGuire, *Emily Spencer, Kristin Stebick, *Koli Stefanos, and,
Lauren Waldron, Undergraduates;

Faculty Sponsor: Dr. Harris, Sociology

Although teen pregnancy rates have been decreasing in the United States (US) over the last decade, teen pregnancy still remains a problem. A particular problem is the relationship between teen pregnancy and poverty. Approximately 40% of all females in the US will get pregnant before age 20 and one out of five will become a teen mother. Becoming a teen parent, has a major impact on the lives of these young adults and their children. For this qualitative study, 11 people, who were teen parents, were interviewed to gain an in-depth understanding of how this life changing event affected their lives: personally, emotionally, academically, and financially, the extent of their social supports, and what lessons they learned from the experience. The common themes found across all the interviews will be discussed. *Presenters.

(I.2) “Factors Leading to the Recent Classification of Seasonal Affective Disorder as a Distinct Psychological Condition and Practices Developed to Treat It”

Nina Dambrosio, Undergraduate

Faculty Sponsor: Dr. Long, Sociology

After conducting introductory research on Seasonal Affective Disorder, the thesis of the project was determined: What factors have lead to the recent classification of Seasonal Affective Disorder as a distinct psychological condition and how have biomedical interventions, environmental adaptations, and cultural practices developed to treat and prevent this disorder? The investigation included clinical psychology books, biomedical research, cross-cultural articles, and interviews. Symptoms include feelings of worthlessness, indecisiveness, and decreased energy levels. The psychobiology is linked to the biological clock, since SAD patients require excessive sunlight to “wake up” their bodies. Treatment includes light therapy, psychotherapy, and medication. The DSM-IV was released in 1994 as a diagnostic tool. Epidemiological explanations include distance north of the equator and a higher prevalence in certain ethnicities and the female gender. Daily social ramifications affect family relations and job stability. Many studies of seasonal depression prove inconclusive due to the resemblance to clinical depression.



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(I.3) “Examining Obesity and Diabetes Risk in Women and Preschool Children”

Meredith Block, Undergraduate

Faculty Sponsor: Dr. Harris, Sociology

Although teen pregnancy rates have been decreasing in the United States (US) over the last decade, teen pregnancy still remains a problem. A particular problem is the relationship between teen pregnancy and poverty. Approximately 40% of all females in the US will get pregnant before age 20 and one out of five will become a teen mother. Becoming a teen parent, has a major impact on the lives of these young adults and their children. For this qualitative study, teen parents were interviewed to gain an in-depth understanding of how this life changing event affected their lives: personally, emotionally, academically, and financially, the extent of their social supports, and what lessons they learned from the experience. The common themes found across all the interviews will be discussed.

(J.1) ‘To the Finest Cause...The Liberation of Mankind’: Alfred Wagenknecht and his Journey through the American Left”

Thomas Jenkins, Undergraduate

Faculty Sponsor: Dr. Morton, History

Alfred Wagenknecht, a native of Germany, immigrated to the United States in 1887 in search of the American Dream. However, prior to Wagenknecht's arrival, a great explosion in Haymarket Square, Chicago, awakened the democratic world to the beginnings of the American left as a new period of American history was beginning to unfold. Wagenknecht envisioned a place where he could provoke the masses, arouse the workers, and fight for equality. Yet Wagenknecht and his comrades, including such historical figures as Eugene Debs, Charles Ruthenberg, Eugene Dennis, William Foster, and Earl Browder, were viewed as political and social agitators. Wagenknecht's journey through the American Left is a story which reveals the internal conflicts of the American Left and the troubles he and others faced during the “red scare.” This paper presents an individual investigation revealing the life of Wagenknecht and seeks to identify the character of Wagenknecht, the struggle he led, and a history of the American Left.

(J.2) “Chesterton’s Graphic Humility”

Dr. Charles Zarobila, Special Collections, Grasselli Library

G. K. Chesterton, the British author, exhibited the virtue of humility in his persona as a writer. The humble persona was not just a rhetorical stance, but a genuine expression of his character. Chesterton was an artist as well as a writer. His humility is also expressed in the way he depicted himself in his graphic art. This presentation will focus on how Chesterton's self-portraiture contributes to reveal-



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ing his essential humility. The presentation, in part, will employ some items unique to Special Collections at the Grasselli Library and Breen Learning Center.

(J.3) "Impressions of a French River: The Seine"

Dr. Helene Sanko, Classical & Modern Languages & Cultures

French people display certain affection for the landscape of their country and very often they express their love of the land in poems, songs and art. One song in particular, "La Seine" by Anny Gould, describes the course of the French river from its source to the sea. As the lyrics unfold, the river is brought to life as a woman who, when reaching Paris, falls in love with the city. There it/she lingers around the islands, turns south and immediately back north, for a last embrace, before continuing its /her course towards Le Havre and the sea. Famous painters such as Corot, Utrillo, Renoir, Monet, Caillebotte, and Seurat depicted the Impressions of a traveler going down the river. In brief, this presentation brings to life a river and the landscapes of its course which inspired the artists of the 1800s and 1900s.

(K.1) "Moral and Religious Issues of Death in the African American Community"

Latrice Edwards, Undergraduate

Faculty Sponsor: Dr. Lassiter, Religious Studies

Over the years surveys and statistics have shown that the African American community is in need of good prevention programs with regards to health and disease. The history of African Americans plays a major role in how they feel about prevention programs. This has to do with the distrust that they have for the government and public health systems, which dates back to slavery. This distrust and suspicion has been elevated because of events like the Tuskegee Syphilis study. Prevention programs must take into account the social and political barriers that have been previously imposed. These programs must also use the church, which is the center of life in most African American communities. Due to the church's connection with the African American community, it is important that the government gain the support of the church to gain the support of the African American community.

(K.2) "Blueprint for the Future: A Green Anarchist Utopia"

Nate Szabo, Undergraduate

Faculty Sponsor: Dr. Birch, Political Science

One is always dreaming of what the world could be like. One is always wondering how we can create a better society. One way of creating a better place is through thinking in utopian theory. This utopia will focus on creating itself from the destructive and oppressive nature of today's world and try to change living into a more harmonious natural balance. Drawing from classical ideas of Anarchism, Green Anarchism, Social Ecology, and Bioregionalism this utopia tries to create a more ecocentric way of collective and communal living.



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(K.3) "Cat-Chat: Nine Lives of the Fantastique French Feline - Cats in French Literature & Culture"

Dr. Martha Pereszlenyi-Pinter, Classical & Modern Languages & Cultures

Are you an "ailurophile" or an "ailurophobe"? Come find out! Explore the cult of the cat - symbol of independence, mystery, evil, femaleness, fertility, sin, cleverness, love, and enigma! French folklore offers us a rich spectrum of songs, nursery rhymes, sayings, riddles, proverbs, and folktales about cats. In literature, the French Renaissance writer Montaigne spoke of its mystery and fascination: "We condemn everything that seems strange to us and everything that we do not understand. . . Who knows whether she [his cat] is amusing herself with me more than I with her?" In 1616, Richelieu , the grand ami des chats," came to power. Later, Guyor Desherbiers, wrote: "The mitered tyrant of France, Richelieu , whose iron arm hold the balance in Europe , finds a human heart when he is near the mewing breed."

(L) PANEL: Student Activism: The Reasons Behind the Action

Participants: Tom Pieragastini & Dana Dombrowski, Undergraduates; Tiffany Kenison (CWRU)

Faculty Sponsor: Dr. Swindal, Philosophy

(M) PANEL: JCU Students Teach Human Rights Lessons to Local Middle School Children

Presenters: ED 350/453 students presenting global education lesson plans taught at Roxboro Middle School and at the Open Doors after school program in Cleveland Heights; Faculty Sponsor: Dr. Merritt, Education & Allied Studies

Three groups of John Carroll education students will present the "global education" lesson plans that they developed and delivered to middle school children as part of their participation in ED 350/453, "Multicultural Education in a Pluralistic Society." The lessons focus on issues of justice and human rights and are designed to encourage development in the cognitive, affective and participatory domains. Presenters will share the goals, methods, and evaluations that they created last semester and reflect on the actual experiences that took place in their classrooms.

(N.1) "Pictures of a Divided Society: The Walls Murals of Northern Ireland"

Maura McCafferty, Undergraduate; Faculty Sponsor: Dr. Clark, Sociology

The dispute between the Protestant and Catholic populations of Northern Ireland has been ongoing for multiple generations. One highly visible result of this dispute is the wall murals in Northern Ireland. These murals, which date back to the early 1900's, are painted along building gables, large walls and other public areas. They are used by competing sides to establish cultural identity, make political state-



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ments, and establish boundaries based upon ethnic, political or religious lines. This paper will review the history of these murals, noting how they have changed over time to reflect changing events. Included within this discussion will be a sociological analysis of the murals focusing on how they have been used to reinforce divisions within the society. The current attempt to demilitarize the murals in an effort to promote healing will also be discussed. Photos of various murals will be included within the presentation.

(N.2) “Japanese Fashion: From the Traditional to the Trendy”

Katheryn Chrzanowski, Undergraduate; Faculty Advisors: Keiko Nakano, Languages; Dr. Purdy, History; Dr. Long, Sociology

During the Meiji Era, Japanese fashion underwent a transformation that largely abandoned traditional Far Eastern dress and embraced trends that were Western. Although Japan has been significantly influenced by Western culture, the Japanese fashion industry has been able to develop a unique style that now influences world fashion trends. My understanding of Japanese fashion was promoted by research utilizing texts and magazines relating to fashion trends which prepared me prior to my trip to Japan . Through personal contacts and observations in Japan, I had the opportunity to evaluate the influence that Japan now has on fashion trends in the West, where Western fashion in fact mimics that of the Far East. The traditional Japanese garb of the geisha has escaped the transformations in Japanese fashion due to the respect given to the geisha's mastery of traditional arts. I myself was transformed through wearing their kimono, make-up, and accessories and could better appreciate the significance of traditional dress in contemporary Japan.

(N.3) “Kurosawa Akira and the Eastern-Western”

Franklin P. Blazuna, Undergraduate; Advisors: Keiko Nakano, Languages; Dr. Purdy, History; Dr. Long, Sociology

Kurosawa Akira is considered one of Japan's and the world's greatest directors. The Western movie genre, especially director John Ford, was an important influence on Kurosawa's jidai geki , or period films. These samurai films would then influence the Western movie genre, specifically Italian director Sergio Leone. There are both similarities and differences between the Western and jidai geki genres. Kurosawa would bridge these two genres to create the “Eastern-Western” sub-genre. Kurosawa carried over Western elements to break jidai geki convention in films such as Seven Samurai and Yojimbo. Remakes of these movies such as The Magnificent Seven and A Fistful of Dollars brought over elements of Kurosawa's movies to break Western convention.



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(O) PANEL: Caring: Multiple Meanings, Promising Practices & Compelling Challenges

Dr. Krystyna Nowak-Fabrykowski, Education & Allied Studies; Dr. Tom Kelly, Dr. Jen Merritt, Dr. Nancy Taylor, Dr. Thea Ford, Kristin Fazio, Fred Buchstein

In our individual and collective inquiry to understand the meaning and implications of caring we analyze different conceptions it involves, different practices it promotes and different dilemmas and misunderstandings it produces. Our research and reflection on caring are filtered through the perspectives of foster parents, pre-service teachers and counselors. Audience reaction to the presentations will be encouraged.

(P) PANEL: Religion, Art & Politics in Medieval South & Southeast Asia: An Internet Learning Tool

Kristin Arbut, Julie Klemens, Jonathan Mis, Justin Ragor, Joe Gilchrist, Undergraduates; Sue Shick, FTIC & Dr. Paul Nietupski, Religious Studies

This is an interdisciplinary student and faculty project in electronic media on the transmission of medieval (9th to 14th CE) Indian Buddhist and Hindu institutions to Southeast Asia. It includes segments on medieval Indian religious, artistic and political structures that served as vehicles for the assimilation and acculturation of Indian institutions in Southeast Asia. Student presenters will discuss the religious ideologies and practices, art and archeological manifestations and the supporting political institutions that were modeled on Indian paradigms in Myanmar, Thailand, Cambodia, Indonesia, and Vietnam. The project is intended to enhance student awareness of global cultures, the general processes of ethnic interaction and the factors that contribute to the spread of ideologies. This effort is student generated, with editorial assistance by Profs. Sue Shick, FTIC and Paul Nietupski, Religious Studies.





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Tuesday, March 15, 2005: Presenting 4:00 to 5:00 PM

(PS1.1) The Society Affects on Man: Racism

Matthew Davenport, Undergraduate; Faculty Sponsor: Dr. Rosenthal, English
The book, "The Native Son," involves the main character, Bigger, who faces racism and environmental determinism. He resides in a world in which he is taught to fear and hate whites. His lack of education limits his success to overcome the challenges of living in a poverty stricken community due to the racist real estate practices. The anger, fear, and frustration that is built up inside of him causes him to react in a violent rage. The focus of this project is the effect of racism on the psychological state of its black victims.

(PS1.2) Interpersonal Relationships & Touch: Does the Type of Touch Differ in Varying Interactions?

Lindsay Smith, Undergraduate; Faculty Sponsor: Dr. Finucane, Communications
Touch is one of the earliest forms of communication and is crucial to human interaction. Not only is touch considered one of the most intimate of all the immediacy behaviors, but also is essential to physical, emotional, and social development. Tactile interaction can suggest love, affection, dominance, or hostility. In relationships a need arises to express closeness through nonverbal communication. With the increase in the length or intimacy in a relationship, there is a positive correlation with the amount of immediacy behaviors. The frequency, initiation, and type of touch that exist between various levels of relationships are the focus of this research. To conduct the study, consumers at a local movie complex were observed and asked to complete a survey. As a result of the experiment, a parallel occurred with touch in burgeoning relationships, however the couples in longer, established relationships showed a decrease in their haptic interaction.

(PS1.3) The Voice of Middle School Math Students: Perceptions and Expectations of their Educational Experiences

Sharyn Turner, Undergraduate; Faculty Sponsor: Dr. Storz, Education
This project involved interviewing math students at Randallwood Middle School in Warrensville Hts., Ohio for the purpose of gaining an authentic perspective about how these students perceive the education they are receiving, especially their math education. The project is an expansion of research conducted by Mark Storz, PhD and Karen Nestor whose research sought the opinions of urban middle school students and their perceptions of caring teachers, their learning, and advice they have for teachers. Discovered patterns in the responses of the students that suggest possible causes of students' lack of interest and poor performance in mathe-



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matics and on proficiency tests have been compared with scholarly research and this presentation displays conclusions that have been drawn about the similarities and differences in the findings. The results will serve to enhance the understanding and education of prospective middle school teachers, in particular, mathematics teachers. Funded by the STARS Program.

(PS1.4) Images of Violence Against Women in Telenovelas

Gladymar Guzman, Undergraduate; Sponsor: Dr. Finucane, Communications
Telenovelas, long popular in Hispanic culture are fictional television programs that are melodramatic in nature. They are usually prime time productions and are one of the major forms entertainment in Latin America. In recent years, viewing interest has extended to United States residents of Hispanic origin. Most of the Hispanic/Latino population live and recognize themselves in the world through telenovelas. This research presents a content analysis of physical aggression/violence against women in telenovelas. Mode of violence was classified into two groups, a) Intensity of Violence, (measures the mode of violence and its realization) and b) Attractiveness of Violence (which analyzed the justification and motivation of violence). Three popular telenovelas were recorded using a constructed week methodology. Two coders analyzed 30 (10 episodes per telenovela) episodes of the three telenovelas. Initial results indicate at least in every two segments appear a violent act, that last from 6-15 seconds and in most cases these acts were against women

(PS1.5) The First Way: Thomas Aquinas's First Way of Proving the Existence of God

TaLeiza Calloway, Undergraduate; Faculty Sponsor: Dr. Kaye, Philosophy
Do we really know what began the universe? Many believe that the universe has always existed and that there was no specific cause. Others believe that God created the universe and therefore was the cause. Still people credit the Big Bang. In the *Summa Theologiae*, Thomas Aquinas outlines five ways or proofs for the existence of God. For our project, we focused on the first way which states that there must have been someone to start the universe. The questions that we are attempting to answer are "Was the Big Bang the beginning of the universe?" and "Is the world infinitely old?" To answer these questions, we compare the perspectives of Thomas Aquinas and the Arabic philosopher Averroes.

(PS1.6) Function of Touch: Effects of Touch on Relational Intimacy

Justina Baryak, Undergraduate; Faculty Sponsor: Dr. Finucane, Communications
Previous studies of nonverbal tactile behavior suggest that touch serves a psychological, emotional, and social function in interpersonal relationships. This observa-



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tional study investigates the function of touch on relational intimacy, specifically, whether the level of touch is an accurate indicator of the level of intimacy in the relationship. Data were collected from 20 randomly chosen opposite-sex couples in the context of a natural public setting. The method consisted of unobtrusive documentation of their nonverbal immediate behavior and self report by the couple on an intimacy measure to assess for the level of closeness in the relationship. It was found that as predicted high levels of observed intimate touch are indicative of high levels of intimacy within the relationship as reported by the couple. Sex differences for this sample are noted. The results confirm past findings and strengths and limitations are discussed.

(PS1.7) A Valid, Culture-Fair Test of Intelligence

Valia Glover, Undergraduate; Faculty Sponsor: Dr. Ruthsatz, Psychology

This study will test the predictive validity of a culture-fair, racially unbiased test of intelligence. The test is based on the ability to process new information. Brief tests of knowledge, based on word meanings, similarities, sayings, and analogies which have recently been proven to be culture-fair will be administered to young adults. The present study will provide further evidence to evaluate a theory which defines intelligence as information processing ability. In that theory, the IQ score is seen as a measure of knowledge resulting from processing ability and the information provided by the culture for processing. Practically, culture-fair tests of information processing that are valid predictors of achievement have important social application. Such tests can aid in providing a valid, culturally unbiased means to select candidates for advanced education, employment, or training.

(PS1.8) A Content Analysis in the Study of Children's Commercials

LeeAnn Baechle, Undergraduate; Sponsor: Dr. Finucane, Communications

Media literacy is more important now than ever before. As television is still the most persuasive and influential medium on the market, understanding the tactics used to promote consumerism is imperative, especially when television targets children. Young children, especially between the ages of two and ten, are fast becoming the largest consumer market, primarily because of their ability to make decisions within the household. Children's commercials, using bright colors, memorable characters, and catchy jingles all foster consumerism within children, which allows them to "get what they want" without really asking for the product by name. Teaching a child to become media literate will help the child distinguish between fantasy and reality, and understand that not everything that occurs on television, especially in commercials, is true. Watching children's commercials will aid in explaining to children what is real and what is not, while also understanding the tactics used to turn children into consumers.



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(PS1.9) *The Path to Agenda Setting: Vanity Fair Magazine & Presidential Politics*
William Shutes III, Graduate; Sponsor: Dr. Hendrickson, Communications
The information gathering and distributing beast we call the media is a reflective being. As a creation of certain people, the media's destiny lies in espousing favored subjects and political methodologies. Few publications forward celebrities, society, and history mixed with a political agenda with such alacrity as *Vanity Fair*. Though focusing on only a small sample of its recent issues, this presentation shows how media and the Presidency do not always make the happiest of bedmates. The articles published in the issues commencing in 2004 have become a bastion of resistance and defiance aimed at the administration of George W. Bush. From the vitriolic editorials penned by Graydon Carter, *Vanity Fair*'s Editor in Chief, to its monthly features aimed at exposing the shortcomings and troubling agenda of the Bush White House, *Vanity Fair* has taken it upon itself to ring the bells of revolution to its targeted readership.

(PS1.10) *Protest Movements & Organized Resistance in an Era of Globalization*
Shaniqua Caffee, Undergraduate; Faculty Sponsor: Dr. DeZolt, Sociology
Given the growth of liberal capitalism around the world, and its use of corporations as a colonization tool, the economic, political, and social landscapes of the globe is under rapid social change. One of the manifest concerns facing this unprecedented growth is the probable ramification for citizens of different nations to lose more than they gain. As a result, the world stage is now experiencing organized resistance by way of protests formally known mainly to the western hemisphere. The question for the protests and protestors is how can they voice their concerns and mobilize their efforts in such a way as to "succeed" as have the western social movements before them. Thus, one purpose of this research project is to determine whether organized resistance in an era of globalization occurs greatly and seems similar to organized resistance from earlier European and United States protest movements. This research project objective is also to assess the structure and patterns of contemporary global organized resistance against those protests from the early period of industrialization in the United States and in reaction, determine whether contemporary organized resistance formulates into pro-labor groups in the second and third world nations.

(PS1.11) *Portrayals of Women in Women's Magazine Advertising*
Elizabeth Roberts, Undergraduate; Sponsor: Dr. Finucane, Communications
Advertisements in women's magazines use attractive, beautiful models to sell the product. Previous analyses of women's portrayals in advertisements in the 1970s, 1980s, and 1990s identified five themes: commodification, fetishization, femininity, sexuality, and social comparison theory. In light of all the technological, cul-



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tural, and social advances, the question arose, have images of women in advertising changed? Advertisements in three recent issues of four major women's magazines were content analyzed for models' ages, objectification, race, sizes, and for proportion of advertising pages to content pages in the magazine. Results indicated support for the expectation that women's representations have not changed significantly. The constant barrage of images in advertisements of models with too thin bodies and perfect appearances can be problematic. Some issues are inevitable no matter how women are depicted in advertising but images of females that affect body concepts and esteem need to change.

(PS1.12) Teaching Media Literacy: The Roles of Women & Politics in the Media
Tera Michalski, Kristi Hosko, & Elise Deramo, Undergraduates
Faculty Sponsor: Dr. Finucane, Communications

As a part of CO 430, Consumer and the Mass Media, we visited Gilmour Academy for two 90-minute sessions to teach a freshman English class about issues related to gender and the media as well as becoming media literate. During the first class we taught the students about how women in the media are depicted. During the second class, we taught them about the roles of gender in politics as perceived by the media. We researched the topics, prepared extensive outlines of the presentations, and created fun and interactive ways for the students to learn the material. Throughout the planning process we each kept journals relating to the planning process and actual presentations. Finally, we presented our experiences and findings to the class in a form of a Power Point presentation.

(PS1.13) The Search for a Theory of National Identity: A Test of Social Identity Theory and Identity Theory
Elaine Hocevar, Manager of Student Records; Sociology Ph.D. student at Kent State University

This paper examines the construction of an individual's national identity and argues that while prior qualitative studies offer ways that people identify themselves as members of nations, the social processes involved in assessing one's perception of attachment are overlooked. The literature on national identity includes such factors as ancestry, ethnocentricity, citizenship, language, religion, culture, and ideology. In this research, I am comparing two social psychological theories. Social identity theory posits a perception of belonging to an ancestry or nationality; while identity theory posits behavioral involvement congruent with a particular ancestry or nationality. Data from the 1996 General Social Survey ISSP Module on National Identity are used in this study. The findings will determine whether social identity theory can be combined with identity theory to form a unique theory of national identity.



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(PS1.14) The Phonological Similarity Effect in Visual & Auditory Lists with Articulatory Suppression

Dr. Janet Larsen, Faculty, Psychology & Dr. Alan Baddeley, University of York, UK

Articulatory suppression eliminates the phonological similarity effect in short term with visual but not auditory presentation. While this supports the phonological loop component of working memory, Jones has argued that the effect is limited to recency and is attributable to sensory memory, not short term memory. We argue that his result stems from use of letter sequences beyond span, leading to abandonment of phonological coding. Using lists of six similar or dissimilar consonants presented either visually or auditorily while participants engaged in articulatory suppression, we found a similarity effect throughout the list for auditory but not visual presentation, supporting the phonological loop model.

(PS1.15) Librarians & Teaching Faculty in Collaboration; New Incentives, New Opportunities

Melody Layton McMahon, Faculty, Grasselli Library

New campus initiatives and technologies are providing many librarians with fresh tools and opportunities for supporting faculty as fellow-participants in the educational process. Librarians who have proven themselves as trusted collaborators will be able to make important contributions, in developing assessment and accreditation processes, in joining in learning communities and campus writing programs, in participating in discussions on the nature of teaching, and so on. More specifically, librarians may find opportunities to assist faculty in determining learning objectives and outcomes, which will be reflected in better course syllabi and course assignments, as well as in the introduction and implementation of new information sources (e.g. image databases, journal alerts, etc.) which can have a direct and valuable effect in the classroom. In some instances, librarians may contribute as guest lecturers on topics in which they are proficient, or even offer entire courses on their own.

(PS1.16) Picture Purr-fect! The Fantastique French Feline: Cats in French Art & Advertising

Dr. Martha Pereszlenyi-Pinter, Faculty, Classical & Modern Languages & Cultures

Imagine a cat – purring away an afternoon! “She” represents the archetype of hedonism, happiness, comfort, enjoying the good life, a warm and secure environment. All quite French – and quite a lot of subliminal feelings on which to hook a good “advertising” message: cats “love” milk – as well as mice and birds, – have good night vision, soft feet, nine lives and bigger and more dangerous relatives! In early Western Christian art, the cat, linked to the idolatry of ancient Egypt and the



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cult of the cat goddess Bastet, was forbidden a prominent role. In France throughout the centuries, cats seldom appear in paintings. When they do, they appear less frequently than dogs, and are more likely to play a supporting or a symbolic role, usually evil, or at best frivolous. Not until the turn of the 20th century, and not surprisingly until the rise of photographic mediums, advertising as art, and the poster craze, was *Madame La Chatte* taken more seriously!

(PS1.17) Where are they now? A follow-up study on the placed at-risk learner in a learning to learning program

Dr. Sophie Kus-Patena, Assistant Dean, College of Arts & Sciences

The placed at-risk learner or student on academic probation is more likely to leave or be suspended from an institution because of academic difficulty. Studies have shown a number of reasons that contribute to academic difficulty for students such as, financial and family obligations and inadequate learning strategies. Researchers have examined the impact of cognitive learning and learning strategy use on the learners' academic performance. These studies indicate that teaching learning strategies and self-regulation increases academic performance and persistence at the college level. An investigation of the effects of a seven week learning to learn program indicated that learning strategy use and GPA improved for students on academic probation. However, did these placed at-risk learners persist after a one year absence from the program? That is, how many students remained on probation, left voluntarily, or were suspended from the University? The researcher will discuss these results and further implications.

(PS1.18) An Introductory Guide to Art from the Court of Burgundy

Ilene Lorig, Graduate Student

Welcome to the fifteenth-century Court of Burgundy, the world of Duke Philip the Bold and his son, Duke John the Fearless. I am H el ene, a secretary to Christine de Pisan, a writer who worked for the king and his brothers, including Duke John. The Spirit of Christine has sent me from Heaven to guide you through the 2004 Cleveland Museum of Art exhibit, Art from the Court of Burgundy. Here, I will acquaint you with a few examples demonstrating the themes of excellence and innovation that characterize the art collected by the Dukes. The objects we will observe include some of the sumptuous illuminated manuscripts, paintings, and sculpture that they amassed. I hope that my visit will enable you to appreciate the creativity and grandeur of the treasure that the dukes unfolded before the eyes of medieval France.





MATH/SCI POSTERS (P2)

Wednesday, March 16, 2005

Group 1 presents 7:00 - 7:45 PM

See page 53 for Group 2 presenting at 7:45 - 8:30 PM.

(PS2.1) Effects of Plasminogen & Vascular Endothelial Growth Factor (VegF) in Mouse Adipose Tissue

Rafael Garabis, Undergraduate; Faculty Sponsor: Dr. Lissemore, Biology
Plasminogen, a single chain glycoprotein zymogen, is the precursor to the fibrinolytic enzyme plasmin. Vascular Endothelial Growth Factor (VegF) is a mitogen for vascular endothelial cells, to stimulating new blood vessel formation. Both wild type and plasminogen deficient mice were pumped with excess levels of either VegF or plasminogen. Samples of adipose tissue from the mice were then stained with Masson's Tichrome to study the effects of the two treatments on the collagen deposition at the arteries and veins. It was found that an increase in plasminogen causes a decrease in the collagen deposition, while VegF was not seen to have a specific effect. Other slides were stained to study the effect on capillary and vessel count. Increased levels of VegF were found to increase angiogenesis, while plasminogen had no effect. These experiments are the beginning to discovering the role of the plasminogen system in adipose tissue accumulation.

(PS2.3) Breast Conservation Therapy: The Cleveland Clinic Experience 1975-1988
Brittany McLane, Undergraduate

Breast Conservation surgery has long been accepted as a viable option for early stage adenocarcinoma of the breast. The procedure consists of a partial mastectomy followed by adjuvant radiation therapy. From 1975 to 1988 670 women with invasive adenocarcinoma of the breast were treated with partial mastectomies at the Cleveland Clinic Foundation. A retrospective chart review was performed to evaluate the local recurrence rate, metastatic free survival, overall disease free survival, and overall survival of this group. Additional information obtained included age, menopausal status, presenting complaint, clinical tumor stage, histology, pathologic tumor stage, number of lymph nodes sampled, number of lymph nodes positive, presence of DCIS, margin status, estrogen and progesterone receptor status, adjuvant systemic therapy, and adjuvant radiation therapy. In the near future, this clinical information will be re-examined and correlated with molecular markers obtained from the original frozen section specimens. Funded by the Cleveland Clinic Foundation.



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(PS2.5) The role of mTOR pathway in polycystic kidney disease

Jessica Zimmerer, Undergraduate; Dr. Weimbs & Dr. Shillingford, The Cleveland Clinic Foundation

Autosomal dominant polycystic kidney disease (ADPKD) is a common monogenetic disorder characterized by the formation of large fluid-filled cysts in the kidney. ADPKD is caused by mutations in one of two genes, *PKD1* or *PKD2*. To investigate the signaling events mediated by the protein product of the *PKD1* gene, polycystin-1 (PC1), we have utilized a cell culture system engineered to express selective domains of the intracellular cytoplasmic tail of PC1 in an inducible manner. Interestingly, we observed that both mammalian target of rapamycin (mTOR) and tuberlin co-localized with a construct encoding the first 92 amino acids of the cytoplasmic tail, termed NTM-PC1. These data suggest that PC1 may influence signaling events via its ability to interact with key components of the mTOR pathway. Although standard immunoprecipitation experiments failed to reveal direct interaction of NTM-PC1 with mTOR or tuberlin it is possible that these protein-protein interactions may occur via intermediary proteins.

(PS2.7) The Effect of S-glutathionylation on Protein Structure & Function

Amanda Leonberg, Undergraduate; Faculty Sponsor: Dr. Chai, Chemistry

This experiment was designed to determine the role of cysteine residues in the regulation of enzyme activity. Cysteine residues are susceptible to oxidation by reactive oxygen species. S-glutathionylation modifies cysteine residues of a protein with glutathione disulfide, a physiological oxidizing agent. In this study, we show that two model proteins, c-Abl and bovine serum albumin (BSA), can be modified by S-glutathionylation and by thiol alkylating agents. Modification of cysteine residues was detected by molecular weight mobility shift and by Western Blotting. Modification of the cysteine residues of c-Abl using glutathione disulfide and thiol alkylating agents inhibits kinase activity. Our results strongly suggest that cysteine residues are required for autophosphorylation and kinase activity of c-Abl. We also show that S-glutathionylation of BSA can be reversed using a glutaredoxin system. This suggests that S-glutathionylation may be involved in maintaining specific redox states of proteins in vivo. Funded by the Huntington Foundation and JCU summer research fellowship.

(PS2.9) The Effect of Ouabain on Bovine Aortic Endothelial Cell Migration

Claire Sullivan, Undergraduate

The migration of endothelial cells plays a critical role in angiogenesis and wound healing. Ouabain is a poison that inhibits the action of the Na⁺/K⁺ pump of the cell membrane. Homeostatic ion concentrations are necessary for cell migration. Bovine aortic endothelial cell (BAEC) plates were divided into four groups, three



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of which received a different ouabain concentration, and the control group. Confluent layers of BAEC were wounded with a razor blade and the plates were then incubated overnight. After staining, cell migration was observed under a microscope and pictures were taken. NIH computer programs were used to quantitatively analyze the amount of cell migration by counting the number of cells crossing the wound. Wound-induced proliferation of endothelial cells was somewhat inhibited by ouabain in a concentration-dependent manner. However, further work must be done before any conclusions as to the relationship between ouabain and cell migration can be made.

(PS2.11) Nitric oxide-dependent increase of endothelial migration by propofol
Jacqueline Nowak, Undergraduate; Angel Navarro, JoAnne Baran, & Marie-Odile Parat, The Cleveland Clinic Foundation

Endothelial cell migration is a critical step in endothelial wound repair and in angiogenesis. Intravenous anesthetics are known to influence the migration of cell types such as leucocytes or cancer cells. The purpose of the current study was to test the effect of clinically relevant concentrations of propofol on endothelial cell migration. Bovine aortic endothelial celled (EC) were used in the experiment and it was found that propofol induced a dose-dependent increase of EC migration. This increase was abrogated by the NOS inhibitor L-NAME. EC's exposed to propofol exhibited an increase of eNOS phosphorylation and Akt phosphorylation. These results show that propofol increases endothelial cell migration, in a NO-dependent fashion. Moreover, propofol activates a NO-generating pathway in endothelial cells.

(PS2.13) The role of affect regulation in women with eating disorders

Shannon Maxin, Undergraduate; Dr. Lucene Wisniewski, Laurelwood Hospital
Faculty Sponsor: Dr. Ruthsatz, Psychology

Recent models have been proposed suggesting that eating disordered behavior may regulate negative affect, albeit maladaptively. This may be true for those individuals diagnosed with bulimia (BN) who have been described as emotionally labile. The goal of the present study was to examine whether women diagnosed with BN differed significantly from those individuals diagnosed with anorexia nervosa (AN) and/or individuals without eating disorder symptoms in their expectations to regulate affect. Results indicated that individuals diagnosed with BN expect to regulate negative affect less successfully than individuals with AN and those without eating disorder symptoms. These findings suggest that affect dysregulation may play a more pronounced role in individuals with BN who have historically been characterized in the literature as being emotionally labile as compared to individuals diagnosed with AN. Treatment models, such as dialectical behavior therapy may be a



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helpful treatment given that this therapy addresses difficulties in affect regulation.

(PS2.15) Heat Shock Factor 4 (HSF4) expression within tumor-draining lymph node antigen-presenting cells correlates with therapeutic antitumor activity
Joshua Czerwinski, Undergraduate; Dr. Poornima Rao, Hallie Graor, & Dr. Julian Kim, The Cleveland Clinic Foundation

HSF4 protein expression was analyzed within the context of a murine model of adoptive immunotherapy of cancer using tumor-draining lymph node (TDLN) cells. HSF4 protein expression was analyzed within TDLN subpopulations using protein electrophoresis and Western Blot analysis. Overexpression of HSF4 protein was found in antigen-presenting cell subpopulations which can stimulate T cells to mediate effective antitumor activity. TDLN cells which have low expression of CD62L (L-selectin) were found to mediate effective antitumor immune responses in vivo. HSF4 was overexpressed in L-selectin low TDLN cells as compared to L-selectin high cells and appeared to be present primarily in ICAM + antigen-presenting cells. These results are significant because HSF4 protein expression within TDLN antigen-presenting cells correlates with therapeutic activity of the effector T cells. This suggests that methods of increasing HSF4 expression may enhance generation of effector T cells for adoptive immunotherapy of cancer.

(PS2.17) Molecular Engineering of a Histidine Rich Glycoprotein Gene Targeting Vector

Megan Mamolen & Lisa Stempak, Undergraduates; Dr. Febbraio, Learner Research Institute, The Cleveland Clinic Foundation

Histidine Rich Glycoprotein (HRGP) is synthesized in the liver, circulates at high plasma concentration, and is secreted by platelets. HRGP is suspected to participate in angiogenesis regulation, but its function in the body remains unclear. To determine its role in vivo, we are creating a mouse null for the HRGP gene. To achieve this, we engineered a targeting vector through directional DNA cloning that homologously recombined at the HRGP allele and disrupted the HRGP gene. Specific techniques utilized included DNA isolation, restriction enzyme digestions, gel electrophoresis, transformations, ligations, and CSCI purification of DNA. The targeting vector was successfully generated and has been electroporated into embryonic stem cells. Selected clones are being screened and positive clones will be injected into blastocysts to create HRGP null mice.

(PS2.19) Behavior & Mood Change in Children following Surgical Intervention for Treatment of Intractable Epilepsy

Lauren Garvey & Ife Ashabo, Undergraduates; Dr. Heather Stott, Northcoast Behavioral Healthcare; Dr. Robyn Busch, Dr. Jennifer Haut, Dr. Richard Naugle, Dr. Elaine Wyllie, & Dr. William Bingaman, the Cleveland Clinic Foundation



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Epilepsy in children has been associated with behavioral and mood problems. While studies have reported improved behavior following surgical treatment, it is unclear whether the same effects are found with mood. The present study investigated the relationship between surgery site and post-surgical behavior and mood changes in children with temporal (TLE; N=31) and frontal lobe epilepsy (FLE; N=10). Participants' scores on the CBCL and CDI were analyzed. The TLE group improved in behavior following surgery, while the FLE group exhibited worse behavior, as was displayed by interactions between group and the Withdrawn/Depressed scale of the CBCL. The TLE group displayed improved behavior on three additional scales of the CBCL. The FLE group exhibited improved mood, as was shown on the Ineffectiveness, Anhedonia, and Negative Self-Esteem scales of the CDI. The present results emphasize the effects of site of resection on behavior and mood, but are preliminary and limited by sample size.

(PS2.21) Optimization & Regional Cost Analysis for Wind/Diesel Hybrid Systems in Remote Alaska

Jennifer Bakisae, Undergraduate; Don Cameron, University of Denver High School; Ian Baring-Gould & Tony Jimenez, National Renewable Energy Lab
Faculty Sponsor: Dr. Schneider, Mathematics

The cost to deliver diesel fuel to remote native Alaskan villages for power generation is high due to severe weather and challenging terrain. Using wind turbines for power generation in these remote areas might be the solution! This presentation will discuss data collection and mathematical and computer modeling used to decide the feasibility and cost effectiveness of using wind/diesel hybrid systems for power generation. This analysis, done this past summer, is part of a larger initiative by Department of Energy and the Alaskan state government to improve the quality of life for remote Alaskan villagers.

(PS2.23) Effective Nucleofection of Primary Monocytes

Roselean Linsemayer, Undergraduate; Dr. Cathcart, Cleveland Clinic Foundation
Monocytes, one of the several types of white blood cells involved in organismal defense mechanisms, have been linked to the pathogenesis of human immunodeficiency virus infection, autoimmune disorders, and chronic inflammatory disorders such as atherosclerosis and arthritis. Utilizing genetically altered monocytes to explore both the disease biology and instigating pathways is a valuable tool in advancing the field towards scientific or therapeutic applications. While there are many available techniques for gene transfer into cell lines, primary cells, which are removed directly from an organism, require a more precise approach due to their mortality. Nucleofection is a new technology that allows electroporation of DNA directly into the nucleus of cells. Based on the cell type, the Amaxa Nucleofector™



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transfers an electrical pulse to cells suspended in a designated buffer environment, increasing the number of transfected cells and decreasing mortality. This research project explores the optimal conditions for successful, reproducible nucleoflection of primary human monocytes.

(PS2.25) Diluted Magnetic Semiconductors

Tim Mitchell, Undergraduate; Dr. Jeffrey Dyck, Physics

The materials under study are $\text{Sb}_{2-x}\text{V}_x\text{Te}_3$ and $\text{Sb}_{2-x}\text{Cr}_x\text{Te}_3$, which are part of a larger group called Diluted Magnetic Semiconductors (DMS). DMS materials are created by inserting a controlled fraction of magnetic ions into an ordinary semiconductor. Through this insertion, one gains control of both the spin and charge degree of freedom of the electron, as opposed to just the charge degree of freedom in an ordinary semiconductor. Control of the spin degree of freedom is achieved at or below the Curie Temperature of about 20K. The ultimate goal is a Curie temperature of 300K, where DMS materials could be used to improve data processing and storage. The variables under study include resistivity vs. temperature, Hall resistance, and magnetoresistance

(PS2.27) Optical Mass Gauging

James Farrant, Undergraduate; Dr. Neil Vandresan, NASA Glenn Research Center; Faculty Sponsor: Dr. Dyck, Physics

Optical Mass Gauging research seeks to find a solution to the problem of quantifying cryogenic liquid propellants in low gravity without resorting to settling. The optical gauging technique introduces a light source of appropriate wavelength into the tank containing absorbing liquid. The tank's interior surface is diffusively reflecting; acting as an integrating cavity it will scatter the light to provide a uniform output reading at a detector. The amount of light-attenuation at the detector should scale with the amount of liquid in the tank, thus providing a gauge for which to quantify the liquid. The initial stages of optical gauging research concern using computer simulated models of uncomplicated materials and geometries for proof of concept. Testing will eventually progress into simulated low-gravity environments. Funding provided by National Aeronautics and Space Administration Headquarters, Washington D.C. through the Undergraduate Student Researchers Program.

(PS2.29) Chronic Headaches: The Relationship between Headache Duration, Stress & Feelings of Non-Support

Tesia Marshik, Undergraduate

The relationship between chronic headaches and psychopathology has been investigated for several decades. Although the exact cause of chronic headache has not been definitively established, evidence strongly suggests that it is hereditary and it



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appears that the cause is a complex amalgamation of several psychological, psychosocial, and medical factors. Stress and daily life events have long been implicated as precipitating factors to headaches. While the sources of stress greatly differ among individuals, common psychosocial stressors include family problems (and other relationship issues), mental illness, financial issues, legal issues, work, and educational problems. The present study investigated the relationship between headache duration and two subscales of the Personality Assessment Inventory (PAI), stress and feelings of non-support. Congruent with past research, stress was found to be positively associated with headache duration. No significant association was found between headache duration and non-support scores, however, non-support scores were significantly correlated with stress scores.

(PS2.30) Gender Stereotypes in Mathematics: The Effects of Stereotype Threat & Anxiety on Expectancy & Performance

Tesia Marshik, Undergraduate; Faculty Sponsor: Dr. Larsen, Psychology

Currently there is a gender stereotype concerning mathematical performance which suggests that men perform better than women on mathematical tasks. While research has not consistently demonstrated the validity of this stereotype, many claim that women's underperformance is the result of increased psychological pressure that women experience when they are confronted with a task at which they are stereotypically considered to be weak, a factor known as stereotype threat. Mathematical anxiety has also been shown to affect individual expectations and performances on mathematical tasks. The present study investigated the effects of stereotype threat and mathematical anxiety on the performance and performance expectations of 53 undergraduate students. The results of this study failed to find any significant effects of stereotype threat or mathematical anxiety, supporting prior research evidence which suggests that there exists no difference in mathematical ability across gender. Implications for this study and suggestions for further research are discussed.

(PS2.31) Predictive Ecological Niche Models for the Distribution & Conservation of *Clemmys guttata* Geauga County, Ohio

Lara Roketenetz, Graduate; Dr. Christopher Sheil, Biology

Clemmys guttata is a species of freshwater turtle whose range extends throughout eastern North America. Rapid decline of populations throughout its range, due primarily to habitat degradation, continues to elicit concern for the conservation of this species. Geauga Park District, which manages 7,100 acres in Geauga County, Ohio has indicated that a conservation goal includes preservation of suitable habitat for *C. guttata*, as well as documentation of existing populations within the



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county. Ecological niche models generate maps in geographical space that accurately depict a species' fundamental niche by predicting areas that contain suitable habitat for that species. These models can be developed through the Genetic Algorithm for Rule-set Prediction (GARP) by finding the correlations among known occurrence points and ecological parameters. The purpose of this study is to highlight areas of suitable habitat throughout Ohio for *C. guttata* by utilizing the models obtained from GARP. Funded by Geauga Park District.

(PS2.32) Formation & Ossification of Bony Elements in the Hands & Feet of Turtles

Daniel Portik, Graduate; Dr. Christopher Sheil, Biology

It has been suggested that the patterns of formation and ossification of the bony elements of the hands and feet of turtles are decoupled developmental processes. The decoupling of these developmental events is demonstrated by examining the precise order of formation of cartilaginous elements of the hands and feet to the order of ossification of these bones. We examined numerous embryos of the Red Eared Slider (*Trachemys scripta*; a common freshwater turtle) to document patterns of formation and ossification in the autopodium, and compared these patterns to similar data for several other species of turtles: Hawksbill Seaturtle (*Eretmochelys imbricate*); Spiny Softshell Turtle (*Apalone spinifera*); Common Snapping Turtle (*Chelydra serpentina*); and Alligator Snapping Turtle (*Macrochelys temminckii*). Similarities and differences in these developmental events are discussed among these turtles.

(PS2.33) Primary Gynecologic Neoplasms & Clinical Outcomes in Patients Diagnosed with Breast Carcinoma

Najwa Al-Husaini, Undergraduate; Dr. Pedro Escobar, Rebecca Patrick, Lisa Rybicki, Dr. Chad Michener & Dr. Joseph Crowe, The Cleveland Clinic Foundation
Several studies have reported that patients diagnosed with breast cancer have a higher incidence of developing a non-mammary neoplasm than patients who have not been diagnosed with breast cancer. The purpose of this study was to quantify and describe non-mammary neoplasms, particularly gynecologic neoplasms, in a particular population diagnosed with breast cancer. Data were collected from the Cleveland Clinic's registry for patients diagnosed with infiltrating breast cancer or ductal carcinoma *in-situ*. Those patients who developed a second, non-mammary neoplasm were identified and their non-mammary neoplastic site, time to development after breast cancer, and clinical outcomes were recorded. Outcome curves were generated using the method of Kaplan and Meier and compared using the log-rank test. Data were available for 4126 patients diagnosed with breast cancer, most of whom did not yet develop a non-mammary neoplasm. Of those who did develop a non-mammary neoplasm, most developed non-gynecologic cancers.



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(PS2.34) The Effect of Traumatic Life Events on College Student Adjustment
In Son Loving, Undergraduate; Faculty Sponsor: Dr. Ruthsatz, Psychology
Vast studies have sought to determine whether or not negative life events can impact an individual's adjustment. Despite the significant findings of previous studies, little or no research has been conducted to determine whether or not these traumatic life events can impact college adjustment. This study sought to investigate the impact of traumatic life events on college students, and whether this impact could affect their overall adjustment to college. Two-hundred and six undergraduate students completed the College Adjustment Scale and a demographic survey in Media Lab. A 2x2 ANOVA found a main effect for violent acts, $F(1, 202) = 18.20, p < .0001$. This study supports previous research that traumatic life events can have a significant impact on college student adjustment

(PS2.35) Swarm-Based Reasoning for the Four Color Mapping Problem
Jason Shifflet, Undergraduate
Faculty Sponsor: Dr. Palmer, Computer Science
Modern science relies on the hypothesis-based scientific method as its main paradigm. Our project combined scientific reasoning with emergence. We used the traditional four color mapping problem (no connected vertices have the same color), to develop a technique combining these concepts. During the graph coloring, a swarm of virtual agents is released onto a graph. Initially every vertex of the graph is given the same conflicting color. As agents wander, they discover conflicts and make hypotheses (i.e. node A should be blue), that might resolve the conflict. Determining the validity of the hypothesis is random and based on the color of adjacent vertices and on other agents' hypotheses. Eventually, an agent's hypothesis will either die out due to refuting evidence or survive because of supporting evidence and be applied to the graph. When applied to large graphs, the hypothesis technique dramatically outperforms a traditional swarm approach. Huntington Summer Research Fellowship, Summer 2004.

(PS2.36) Equivalences of the Axiom of Choice
Octavio Mesner, Undergraduate
Faculty Sponsor: Dr. Shick, Mathematics
The Axiom of Choice states if C is a collection of nonempty sets, then we can choose a member from each set in that collection; there exists a function f defined on C with the property that, for each set S in the collection, $f(S)$ is a member of S . Consider an apple orchard farmer who has, a given number, x barrels of apples. The axiom of choice says that the farmer's x friends may choose one apple from every barrel and load it in the farmer's truck. This axiom seems to be completely innocuous and can be very useful to prove some theorems in various fields of



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mathematics. However, it is logically equivalent to some very unintuitive (and perhaps even counterintuitive) statements. The goal of this presentation is to explain some equivalences of the Axiom of Choice, prove that the Well-Ordering theorem is equivalent to the Axiom of Choice, and explain its controversial consequences.

(PS2.37) Challenges facing oral health care in Africa: Nigerian Perspective

Chineze Enwonwu, Undergraduate

Faculty Sponsor: Dr. Weber, Biology

In the continent of Africa, there is a disproportionate occurrence of oral disease within the population often having grave and fatal consequences. One reason for this growing public health crisis is the massive social disruption in the continent. However, this problem is rooted in Africa's history. Colonization of Africa by Great Britain resulted in the importation of a number of colonial and other unsustainable oral health strategies that have failed to improve oral health in the region. My research focus is on the challenges that face oral health care in Africa, using Nigeria as a model. This research will look at the development of oral health care in Nigeria from the British rule to present day and evaluate the current status and challenges facing oral health care in Nigeria. Finally, strategies for improving oral health care in this region will be presented. Funded by Ohio Board of Regents.

(PS2.38) Is it Possible to Save the Life of a Cell after Exposure to 100% Oxygen?

Lori Najm, Undergraduate

The purpose of this experiment is to see if the induction of proteasomal pathways for degradation of proteins that would be oxidatively modified in 100% oxygen, would protect the cell. This is done by measuring the levels of production of four enzymes involved in ubiquitination after the cell has been exposed to 100% oxygen. It is thought that instead of a cell being destroyed during 100% oxygen exposure, it can possibly save itself by purely destroying altered proteins through the proteasomal pathway. Four enzymes have been chosen. The DNA is amplified using polymerase chain reaction and then marked with a radioactive probe. The last step is to measure the levels of expression for each of the enzymes to see whether or not they have increased or decreased in the presence of 100% oxygen. The experiment is still being conducted therefore no data has yet been attained.

(PS2.39) Use of Aspect-Oriented Programming with Swarm Algorithms

Peter Kovacina, Undergraduate; Faculty Sponsor: Dr. Seiter, Computer Science

The use of aspect-oriented programming in extending swarm algorithms serves to be a beneficial procedure for separating emergence from the agent level and extending source code domain. Through manipulation of the java bytecode, aspects created three new views for a swarm application that initially displayed one view. In implementing the new views, new fields and methods were introduced into the



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existing classes, allowing for the synchronization of the new views with the initial view and augmentation of the original data model, all while leaving the original application code untouched and agent integrity intact. Using an aspect-oriented approach, code modularity is achieved for concerns that are difficult to encapsulate with the traditional MVC model. Funded by the Huntington Foundation.

(PS2.40) Vascular Endothelial Cell Gene Expression Linked to Atherosclerosis
Michael McDermott, Undergraduate; Sponsor: Corttrel Kinney, Lerner Research Institute, The Cleveland Clinic Foundation

The central objective of the research in the lab of Paul DiCorleto, Ph.D. is to understand the role of gene expression by vascular endothelial cells and its correlation to atherosclerotic plaque development and other diseases in the large blood vessels. We wanted to explore the importance of map kinase phosphatase-1 (MKP-1) induction on the activation of specific thrombin-induced endothelial cell genes. My project involved using tissue culture in the isolation and culturing of human umbilical vein endothelial cells (HUVECs). Real-time reverse transcription polymerase chain reaction (RT-PCR) was used to search for target genes that could be induced by thrombin in endothelial cells, and it was found that several cell adhesion molecules, growth factors, and proteins involved in coagulation were increased after three hours of stimulation. Furthermore I helped to show that we could silence MKP-1 using a specific silencing RNA (siRNA) approach

(PS2.42) What is Musical Intelligence?
Chinelo Enwonwu, Undergraduate;
Faculty Sponsor: Dr. Ruthsatz, Psychology

Over twenty years ago, a renowned psychologist, Howard Gardner, introduced the idea of multiple intelligences. His theory suggested that there are several intelligences that are independent of our traditional concept of general intelligence. Musical intelligence is one of the intelligences cited. The existence of musical savants clearly supports Gardner's theory of musical achievement in the absence of general intelligence. Musical savants are individuals with mental retardation, who can perform musically beyond what would be predicted given their low level of general intelligence. The current study addressed the underpinnings behind musical audiation, the core of musical intelligence. The study used the Gordon's test of music audiation and the WAIS digit span. The current study supports that what is at the core of Gardner's theory of musical intelligence is short-term memory. The educational implications of Gardner's theory were also studied. Funded by the Ohio Board of Regents.



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(PS2.43) Genotyping Epilepsy

Megan Duffy, Undergraduate; Sponsor: Dr. Qing Wang, The Cleveland Clinic Foundation

Epilepsy is a neurological symptom that affects many people worldwide. An estimated one percent of the population in the United States has epilepsy with about one hundred thousand new patients diagnosed each year. It is a complex of several diseases of brain function characterized by recurring seizures. Although the cause of epilepsy in many people is unknown, there is evidence that susceptibility to some types of epilepsy may be inherited. This project was conducted to identify the gene which caused epilepsy in an Amish family. This family consisted of grandparents, parents and 16 grandchildren. The grandparents and parents showed no sign of epilepsy but 5 of the grandchildren inherited epilepsy at a young age. Attempts to identify the gene were done by conducting polymerase chain reaction (PCR) on each of the family members' DNA and then sequencing the DNA to find a mutant allele.

(PS2.44) Isolation and characterization of spontaneous suppressors in the budding yeast *Saccharomyces cerevisiae*

Sarah Wagner, Undergraduate; Faculty Sponsor: Dr. Martin, Biology

The yeast *SNR6* gene encodes the U6 small nuclear RNA that is essential for pre-mRNA splicing. Among genes that are transcribed by RNA polymerase III, *SNR6* is rare in that it processes a TATA box. This TATA box performs a critical role in transcription start site selection but is non-essential in vivo. However, reducing the distance between the A and B block promoter elements by 42 base pairs (? 42) results in a 4-fold decrease in transcription and causes the TATA box to be necessary for cell survival. We selected spontaneous suppressors of the synthetic lethal TATAbox-sub/? 42 allele and chose 34 suppressors for further characterization. Twenty-six of these strains exhibited a growth defect. Analysis of suppressor growth under various conditions revealed six classes of suppressors, and we are currently characterizing five of these strains. Funding was provided by the Huntington/Codrington Foundation.

(PS2.45) Shape change through ontogeny in the chondrocranium of the Red-Eared Slider, *Trachemys scripta*

Mike Jorgensen, Graduate; Dr. Christopher Sheil, Biology

Geometric morphometrics is a statistical tool that is used by biologists to help explain the morphological variation in an organism throughout space and time. One benefit of applying these methods to studies of ontogeny is the visual representations of developmental sequences that they can produce. The Procrustes method of generalized least squares superimposition has been used to describe interspecific



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and intraspecific differences in allometry of adult turtles. To date, allometry of the turtle skull through early ontogeny has not been described. Herein, the shape change (or allometry) of the cartilaginous skull of the Red-Eared Slider cranium, *Trachemys scripta*, is described through early ontogeny with modern geometric morphometrics.

(PS2.46) Genotyping Akt-1 Mice

Denise White, Undergraduate; Alla Gomer & Tatiana Byzova, The Cleveland Clinic Foundation

The purpose of this experiment was to determine the genotype of a specified population of Akt1 mice. This was accomplished by first isolating DNA from 118, 5 week old, Akt1 mice pups born from heterozygote parents, then running PCR, followed by gel electrophoresis in order to genotype the offspring. The genotype of each mouse pup was recorded. The Akt1 mouse pups were then tagged and wild-type(WT) and knockout(KO) mice were used for experimental purposes while heterozygous(H) mice were used for breeding purposes.

(PS2.47) Managing a Marketing Oriented Organizational Culture

Dr. Beth Martin, Psychology; Dr. James Martin, Management, Marketing & Logistics

Based on in-depth interviews with CEO's from 21 manufacturing companies, this research highlighted key practices in which companies engage to create and maintain a market orientation. Managers should recognize the value of a market oriented organizational culture as a resource to help build competitive advantage. By actively managing the implementation of a market oriented culture, the manager can leverage that resource into a significant gain for the company. This includes business practices in six categories: leadership, market oriented culture, open communication, employee focus, performance management and proactive response to challenges and threats. The specific form of business practice within each category was less important, but engaging in management activities in all six categories appeared to be very important in creating/maintaining a market orientation that transcended the organization. This, in turn, appears to be critical for the company to translate market orientation, as a resource, into a competitive advantage.

(PS2.48) Amount of Training, Speed Transfer, & Class Mergers via Conditional Discriminations

Dr. Abdulrazaq Imam, Psychology

Eleven participants demonstrated two independent groups of three seven-member equivalence classes, one with and one without a speed contingency, using 6-, 12-, or 15-trial blocks. Participants then experienced transfer training and testing. Dur-



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ing transfer training, either the three A-stimuli (Transfer 1) or only A1 and A2 stimuli (Transfer 2) from the speed classes served as sample for the A-stimuli from the non-speed classes. Transfer tests involving all the remaining non-speed class members showed substantial increases in the response speeds of the non-speed class members suggesting mergers of the speed and non-speed equivalence classes. Similar increases for the Class-3 members in Transfer 2, however, raise questions about the independence of class members. Preparation funded by Faculty Summer Research Grant, The Graduate School.

(PS2.49) Chemical & Microbiological Studies of the Effectiveness of Bioaugmentation to Prevent Algal Growth in Two Shaker Heights Lakes in the Doan Brook Watershed

Dr. Michael Nichols, Chemistry; Keith Jones, Doan Brook Watershed Partnership; Martin Reese, City of Shaker Heights, OH

To curb excessive algal growth in two small lakes, the City of Shaker Heights decided to use bioaugmentation, where a proprietary mixture of three bacteria was sprayed on two lakes to remove excess nitrogen nutrients and oxidize organic material in the lake sediments. A bi-weekly treatment routine was enacted during Summer 2004. Extensive chemical and biological monitoring of two treated lakes and a third untreated "control" lake were performed. Preliminary conclusions include: the lake sediments contained 10-15% organic solids and the treatments will not significantly increase the depth of the lake; one of the treated lakes had high E. coli concentrations, most likely from urban or sewer run-off infiltration; algal growth was limited in both treated and untreated lakes; and ammonia and phosphorous analyses were inconclusive as to the effectiveness of the treatments. Future chemical studies are planned for this coming summer.

(PS2.50) Raising Student Interest in Oscillating Systems by a Study of Car Suspensions

Dr. Klaus Fritsch

In physics classes which include mechanics, students study the behavior of oscillations in simple systems made up of a mass and a spring. Student interest in this material can be raised considerably by an experimental and theoretical study of the suspensions in their cars. Car suspension systems are very complicated. By simple measurements and by interpreting these through the use of physical and mathematical models, the students can learn much about the behavior of springs and oscillating systems as well as about the importance of using models in science. In particular, I will illustrate various approaches to obtaining a value for the bounce mode frequency of a Toyota Camry. The bounce mode represents purely up-and-down motion of the car body without pitching or rolling.



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(PS2.51) Formation of the Crista Sellaris of the Red-eared Slider, *Trachemys scripta*

Frank Tulenko, Graduate; Dr. Christopher Sheil, Biology

Prior to the formation and ossification of the mature braincase, the embryonic chondrocranium serves as an early cartilaginous model for cranium formation, around and within which the dermal and endochondral elements of the skull ossify, respectively. The purpose of this study was to describe the formation of the mature chondrocranium of the Red-eared Slider, *Trachemys scripta*, and to evaluate several hypotheses that describe the relative timing and formation of the crista sellaris, a cartilaginous precursor to the dorsum sellae in the mature adult. Five stages were examined (Stages 14–19) using both cleared and double-stained embryos and serially-sectioned embryos. Herein, the formation of the chondrocranium of *T. scripta* is described and compared to other turtle taxa. Initial results suggest that the crista sellaris forms primarily from the ventral margin of the posterior orbital cartilage during Stages 16 and 17 of development.

(PS2.52) Mathematical Art

Tempress Jackson, Undergraduate

Faculty Sponsor: Dr. Chen, Mathematics & Computer Science

The correlation between mathematics and art is an often-overlooked yet exciting field of study. The creativity of mathematics and the structure of art lend themselves to an incredible collaboration. Mathematicians and “mathe-phobics” alike will appreciate the intricate and multifaceted structures and patterns that can be created from the simple stretching and rotations of commonly encountered geometric shapes (polygons). This research will utilize the works of M.C. Escher (1898–1972) to illustrate concepts such as symmetry, tessellations and tilings. Two of the most remarkable characteristics Escher’s work that exemplify the relationship between math and art are his interpretations of the dimensionality of space and the logic of space, which are respectively, the ability of the mind to perceive three-dimensionality in two dimensional space and the spatial relationships within the physical world that the mind considers necessary and have a surprising effect when violated in two dimensional space.





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Group 2 presents 7:45 – 8:30 PM

(PS2.2) Determination of Copper in Rhus Vernicifera Laccase using Di-2-Pyridyl Ketone Benzoylhydrazone

Beth Anne McClure, Undergraduate;

Faculty Sponsor: Dr. Catherine Miller, Chemistry

Rhus vernicifera laccase is a blue oxidase protein which contains four copper centers that function in the reduction of molecular oxygen to water coupled with the oxidation of large organic substrates. Studying derivatives of laccase can lead to an understanding of copper transport and copper exchange in other metalloenzymes. A spectroscopic copper assay using di-2-pyridyl ketone benzoylhydrazone developed by Pinto et al. was adapted for use with samples of laccase. The detection limit was 42 ppb and the results were linear up to 1.00 ppm. Atomic absorption spectrometry was used as a reference method and the results agreed within experimental error. The adapted method is advantageous because it requires 50% less protein to analyze for copper than the currently used biquinoline assay and takes less time than atomic absorption spectrometry. Funded by the Clare Boothe Luce Foundation.

(PS2.4) Development of ^3He Gas Recovery System for a Polarized ^3He Target

John Cesaratto, Undergraduate; Tatsuya Katabuchi and Dr. Clegg, University of North Carolina, Chapel Hill and TUNL

An optically pumped, rubidium-spin-exchange ^3He polarizer has been developed at TUNL for studies of the spin-spin interaction in $p^+ ^3\text{He}$ scattering. Spin correlation measurements have begun at proton bombarding energies $E_p < 6\text{ MeV}$ where large experimental uncertainties exist and where new 4-body theoretical calculations of the NN interaction are becoming available. For our experiment, $\sim 100\text{ nA}$ of polarized protons are incident on ^3He gas of $\sim 30\%$ polarization, contained in a Pyrex target cell with Kapton windows. Since the lifetime of the gas in this cell is $\sim 3\text{ hr}$, we have constructed a system to recover ^3He of spent polarization so that it can be returned to the optical pumping cell using a diaphragm pump to compresses the used gas into storage bottles, and circulate the gas through an LN₂ activated charcoal trap and a purifier to remove impurities before replenishing the pumping cell. A description of the performance of this gas recovery system will be provided. Supported by a NSF & USDOE grant.



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(PS2.6) The Contribution of Race & Gender in the Development of Self Identity
Justina Baryak, Undergraduate; Dr. Young, Psychology

This paper focuses on the contributions of race and gender in the development of self-identity in adolescents. Based on the work of Erik Erikson, it focuses first on the theoretical issues of identity formation during early adolescence. The second and third parts of the paper address the contributions of race and sex to this development. The final section explores what is missing in the current literature and makes suggestions for future research. The overall goal of this manuscript is three-fold: to provide an overview of how these concepts have evolved to encompass new and different meanings, to contribute to the growth in research of intersectionality, and to facilitate accurate understanding and communication in the new millennium. This research was conducted at JCU and funded by the Huntington Foundation.

(PS2.8) Domain-specific expression of Eph receptors and ephrins in the developing cerebellar system

Katherine Omahen, Undergraduate; Dr. Nakamota, Lerner Research Institute, The Cleveland Clinic Foundation

Eph receptors are the largest subfamily of receptor tyrosine kinases, and they interact with a group of ligands, named ephrins. While Eph receptors and ephrins have been connected with the formation of the nervous system, their functions in cerebellar development are not well understood. In the present study, we examined expression patterns of Eph receptors and ephrins in the mouse and chicken cerebellar systems. We found that in the developing cerebellum, different combinations of EphA receptors and ephrin-A ligands were expressed in distinct domains of Purkinje cells, whereas expressions of EphB receptors and ephrin-B ligands were mainly detected in the granule cell layer. EphA receptors and ephrin-A ligands were also expressed in different domains of the inferior olive, which contains neurons projecting to the cerebellar Purkinje cells. These results suggest that Eph receptors and ephrins are involved in the pattern formation and neural projections in the cerebellar system.

(PS2.10) Loss of Heterozygosity Clonality Validation

Mallory Smith, Undergraduate; Bonnie Shadrach, The Cleveland Clinic Foundation

Loss of heterozygosity (LOH) testing has achieved recent popularity in its use to answer clinical questions previously impossible to determine with certainty. In this validation, 2 cases, of 10 total, were found in which patients were diagnosed with two tumors, one a primary lung tumor with evidence of metastasis and the other a



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tumor found elsewhere in the body. DNA from each patient was extracted using HighPure DNA extraction. Polymerase chain reaction (PCR) will be performed on each sample using 12 sets of fluorescently labeled primers corresponding to microsatellite markers located on chromosomes 1p, 3p, 5q, 9p, 10q, 17p, and 22q and the products run on ABI 310. Clonality of the primary lung carcinomas will be assessed by comparing LOH patterns observed from analysis of each microsatellite marker. From this, the statistical likelihood of dependent vs. independent origin of the tumors will be calculated. Funded by the Cleveland Clinic R&D Fund.

(PS2.12) Chemokine Receptor CXCR4 is Up-Regulated in Human Atrial Fibrillation

Asneha Iqbal, Undergraduate; Dr. Ruehr & Dr. Van Wagoner, The Cleveland Clinic Foundation

Inflammatory pathways are implicated in the development of atrial fibrillation (AF), the most common type of arrhythmia. Chemokines direct the cellular response to local inflammation. In this study, we examined the expression of the CXCR4 chemokine receptor in atrial tissues from patients undergoing surgery for symptomatic AF. Left atrial tissue from surgery patients with or without AF and with or without valvular heart disease was analyzed using Western Blotting to evaluate the expression of the CXCR4 receptor. Adjacent tissues were sectioned, mounted and immunostained for microscopic examination of CXCR4 expression. Relative to control patients with no history of AF or stroke, AF patients had more abundant atrial CXCR4 expression. In addition, AF patients with CAD had greater CXCR4 expression than AF patients with valvular heart disease. Immunostaining confirmed that CXCR4 expression was highly expressed in the atrial myocytes, rather than only in blood cells. Funded by the American Heart Association and NIH HL-65412

(PS2.14) Resistivity & Anomalous Hall Effect of GaMnAs

Kimberly Adams, Undergraduate; Dr. Dyck, Physics

Diluted magnetic semiconductors (DMS) are compounds in which there is a non magnetic semiconductor host doped with a small concentration of a magnetic element. DMS thin films are being investigated for their potential as spintronic devices that would utilize both the spin and charge properties of the electrons in a single material. Resistivity and Hall Effect measurements were made on a sample of (Ga,Mn)As through a temperature range of 10K-300K. The influence of the spin of the manganese ions is clearly evident in the electrical transport properties. The obtained data was compared to a model for the anomalous Hall Effect in these materials. Funded by the Henry Luce Foundation and Research



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Corporation.

(PS2.16) Quantitative nonisotopic nitrocellulose filter binding assays: bacterial manganese superoxide dismutase-DNA interactions

Joshua Czerwinski & Stephanie Hovan, Undergraduates

Faculty Sponsor: Dr. Mascotti, Chemistry

Nitrocellulose filter binding assays (NCFBAs) have been used for many years to qualitatively and quantitatively determine protein–nucleic acid affinities. While this technique can be robust thermodynamically and fairly simple to perform, the requirement of radiolabeled nucleic acids (typically 32 P) has several major drawbacks. We have modified standard NCFBAs by developing a quantitative nonisotopic chemiluminescent method using biotin-labeled DNA and a dual-filter format. Quantitation of the photon emissions is simplified by use of a cooled charge-coupled device camera, although exposure to X-ray film and quantitation by densitometry could also be employed. We have replicated parts of a published binding study using identical solution conditions and the nonisotopic method that we have developed. We provide quantitative agreement between the isotopic and the nonisotopic methods.

(PS2.18) Binding of Urea to Streptavidin: Let's Get Specific!

Seema Patel & Tony Mustovich, Undergraduates; Dr. Mascotti, Chemistry

Faculty Sponsor: Dr. Waner, Chemistry

Streptavidin (SA) is a widely used protein in clinical diagnostics, biochemistry, and biotechnology. The utility of this protein derives from its strong, specific binding of biotin (Vitamin H). SA and biotin can be used to label biomolecules such as DNA, antibodies and other proteins. SA is a stable protein, meaning it does not easily unfold. SA normally exists as a tetramer, composed of four monomer units. Within each monomer is a binding site for biotin. Data suggests that at low concentrations urea acts as a biotin analog; meaning it specifically binds to the biotin sites of the SA protein. SA is also surprisingly stable at high concentrations of urea that would denature most other proteins. In order to investigate the specific and non-specific interactions of urea with SA, the intrinsic fluorescence of SA was measured as a function of urea concentration using a spectrofluorimeter.

(PS2.20) The Impact of Depression & Anxiety on Pre- & Post-Surgical Memory Functioning in Adults with Temporal Lobe Epilepsy

Ife Ashabo, & Lauren Garvey, Undergraduates; Robyn Busch, Heather Stott, Dr. Naugle, Dr. Najm, Dr. Bingaman, The Cleveland Clinic Foundation

The purpose of this study was to investigate the impact of depression and anxiety



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on memory functioning in pre- (n=72) and post-surgical (n=66) patients with Temporal Lobe Epilepsy (TLE). The results of this study suggest that depression and anxiety are indeed related to memory performance in patients with TLE. Anxiety appears to have a greater impact on memory performance than depression. Patients with high pre-surgical anxiety subscale scores on the Personality Assessment Inventory (PAI) had significantly lower pre-surgical memory indices than non-anxious patients, whereas patients with high pre-surgical depression scores demonstrated poorer performance than non-depressed patients on only auditory immediate memory pre-surgically. Interestingly, pre-surgical anxiety was also related to post-surgical visual memory scores, whereas pre-surgical depression scores were unrelated to post-surgical memory. This suggests that preoperative assessment of anxiety may provide prognostic information about memory changes post-surgically. Unexpectedly, post-surgical depression and anxiety scores were unrelated to post-surgical memory in this sample.

(PS2.22) First report of *Heribauidiella fluviatilis* from east of the Mississippi River
Dr. Jeffrey Johansen, Biology; Dr. Rex Lowe, Bowling Green State University
We recently discovered a population of the brown alga, *Heribauidiella fluviatilis*, from Abrams Creek, Tennessee, within the boundaries of the Great Smoky Mountains National Park. This unusual crustose alga is one of only a few species of brown algae found in freshwater habitats, the phylum consisting mostly of marine seaweeds. It represents a new phylum record for the park, and it is the first record of the alga east of the Mississippi River. An extensive geographic search was made for this alga in the 1980's, and it was found only north of Oregon and west of the Mississippi, primarily in clean mountain streams. Our population represents a very disjunct record, and demonstrates the value of having protected species reserves such as the Great Smoky Mountains National Park. This work was supported by a Biotic Surveys and Inventories grant from the National Science Foundation.

(PS2.24) New dismid records for the Great Smoky Mountains National Park
Karolina Fuciková, Graduate; Dr. Johansen, Biology; Dr. Lowe, Bowling Green State University
We have been participating in the All Taxa Biodiversity Inventory in the Great Smoky Mountains National Park. This project has as its goal to inventory every species in every phylum occurring in the park. In July and October 2004, diverse algal samples were collected from the park. Seep walls and waterfalls were especially targeted, but other habitats were also investigated (plankton from Fontana Lake, ponds, rock scrapings in streams). After these samples had been examined, 35 new species records of desmids (Zygnematales: Desmidiaceae, Mesotaeniaceae) were added to the list of observed taxa for the park. We suspect much greater diversity in the Desmidiaceae is yet to be found. This work was supported by a Biotic Sur-



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veys and Inventories grant from the National Science Foundation.

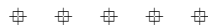
(PS2.26) The red alga *Rhodospira sordida*: first report east of the Mississippi River
Maggie Fitzpatrick, Undergraduate; Karolina Fuciková, Graduate; Dr. Johansen, Biology; Dr. Lowe, Bowling Green State University

We recently discovered a population of the red alga, *Rhodospira sordida*, in samples from a seep wall in the Great Smoky Mountains National Park. This is an extremely rare alga was reported previously only from seep walls in Europe and Israel. The last published reports of the alga were made in the mid-1970's. A culture of the algae was made from one other site in North America (a spring in Arkansas) in 1977, but no publication accompanies this record. Since discovering the alga this summer, we have found a second population in a seep wall in South Chagrin Reservation, Ohio. We suspect that this species has a broader distribution than previously thought, and has been overlooked or misidentified in past studies. This work was supported by a Biotic Surveys and Inventories grant from the National Science Foundation.

(PS2.28) A Study of Neuronal Pentraxin 2 in the Pathway of Neuronal Transmission

Brandy Socha, Undergraduate; Dr. Mark Perin, Learner Research Institute, The Cleveland Clinic Foundation

Three proteins, Neuronal Pentraxin (NP1), Neuronal Pentraxin 2 (NP2), and Neuronal Pentraxin Receptor (NPR), were identified using taipoxin, a lethal snake venom, while investigating the mechanism of neuronal transmission. The neurotoxin binds to this family of proteins, inhibiting neurotransmitter release. The main goal of the ongoing study is to determine the importance of these proteins in the mechanism of neuron synapse trafficking and reuptake of synaptic material. Transgenic "knock-out" mice lacking NP1, NP2, and NPR were generated for study. The contribution to the lab was determining the genotypes the mice lacking NP2. The results gave viable heterozygous mice lacking NP2. These mice were crossed to produce homozygous mice, but one line failed to generate/yield homozygous mice. This line was backcrossed for seven generations, without producing homozygous mice. Further study is needed to investigate if the lethality is due to a linked mutation.





NOTES



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