



2009 SRS

***15th ANNUAL
SUNY NEW PALTZ
STUDENT RESEARCH
SYMPOSIUM
ABSTRACT BOOK***

*15th ANNUAL
SUNY NEW PALTZ
STUDENT RESEARCH SYMPOSIUM*

**Friday May 8, 2009
Quiet Study Hall, Library
5:00- 7:15 p.m.**

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Sponsored by:

***The SUNY New Paltz Research, Scholarship and
Creative Activities program***

Editor and Cover Design:
Maureen Morrow, RSCA Director

The 2009 Student Research Symposium

Once again, as the academic year comes to a close, we have this opportunity for scholarly exchange amongst our faculty and students. The 2009 Student Research Symposium will include 54 poster presentations of work performed by 68 students representing 19 departments. This is an occasion for us to share our accomplishments in a spirit of camaraderie.

The Student Research Symposium is sponsored by the Research, Scholarship and Creative Activities (RSCA) Program. The mission of the RSCA program is to encourage and support student- faculty collaboration in the active participation of scholarly and artistic activities that generate new knowledge or works.

Such activities enable students to gain knowledge, skills, and confidence to contribute as productive members of their professions and contribute to a learning environment which is challenging, student-centered, and personalized.

Acknowledgements

We would like to thank the following people for their generous support of this event:

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Corwin Senko, (Psychology), Giordana Grossi (Psychology), Megan Coder (Library),
Preeti Dhar (Chemistry), Robin Arnold (Art), Jed Mayer (English),
Kate McCoy (Educational Studies), Davina Vora (Business)

Welcome to the Student Research Symposium

Among our chief goals for New Paltz students are that they will forge close ties with faculty mentors and prepare themselves for graduate or professional school. This is why I'm so proud about the growing numbers of undergraduates involved in research projects with faculty.



Our student research initiative provides wonderful ways for students to push beyond the boundaries of their knowledge and to see just how talented they are as researchers and junior scientists. But surely the most enduring aspect of their research will be the bonds that they forge with faculty who will be intellectual guides and friends for the rest of their lives. I salute all of the students and faculty who have given so selflessly of themselves to make this program work—and who embody New Paltz at its best.

Steven G. Poskanzer
President

The opportunity to engage in research in a meaningful way – where the answers are not already known and students must retrieve, understand and assimilate information from current research in the field – provides both a deeper appreciation for their discipline and, often, helps students find their career direction.



We realize that successful student research requires a great commitment of faculty time and attention. Helping to plan, monitor, and guide the project as well as helping to shape the final written and presentation product must be carefully done. And the advisory committee and campus-wide coordinator play very important roles in the management of the entire process and in organizing events such as this symposium. But there are rewards for faculty as well.

As I reflect on my academic career, I find that working directly with students in my lab has been my most fulfilling teaching experience. The bonds that we formed by working together on a day to day basis lasted long after the students finished their undergraduate degrees. Most of the several dozen students who undertook research projects in my lab went on to complete doctoral degrees and kept in contact with me and their fellow students during their further study. I hear from them from time to time even now. As faculty members, we take pride in the accomplishments of our research students throughout their careers. I would like to congratulate students and faculty for the work that you've completed this year and hope that your research activities will continue to be fulfilling.

David Lavalley
Provost and Professor of Chemistry

On behalf of the Research, Scholarship, and Creative Activities Advisory Board, I would like to welcome you to the 2009 Student Research Symposium. This event is the 15th consecutive celebration of student-faculty scholarship at SUNY New Paltz.



As you are aware, the process of producing scholarship through research and/or creative activities is both difficult and exciting. I am certain the faculty- student interactions you experienced in this process were unique and stimulating. Please know that these experiences are a rewarding part of the job of a college professor; so do stay in touch after you have graduated. It brings us all great joy and inspiration to hear of your post- New Paltz adventures and success.

I hope this event brings you fulfillment in presenting the results of your work and inspiration from your fellow students' accomplishments.

Maureen Morrow

RSCA Director

Associate Professor, Biology

Photo credits:

President Poskanzer by Marlis Momber

Provost Lavalley by the Office of Public Affairs

Maureen Morrow by Christopher Pryslopski

Research, Scholarship and Creative Activities Program

Faculty-student collaborators may propose projects for support through the Summer Undergraduate Research Experience (SURE) and Academic Year Funds programs (AYURE). Both of these programs are competitive and are selected for support by a faculty committee. Congratulations to all of this year's award recipients (see pages 26-27).

SURE

The focus of the SURE program is to encourage intensive student participation in an aspect of faculty research.

Each student participant is supported with a stipend for the 8-week summer project and is expected to devote at least 35 hours per week to the project. Faculty mentors direct and provide guidance to participating students as they work on a particular aspect of the faculty's research program. As a goal of this program is to encourage ongoing faculty-student collaboration, and thus students are encouraged to continue working on the project during subsequent semesters.

ACADEMIC YEAR FUNDS

This program supports student- faculty collaborations on projects that span the disciplines. Projects that generate new knowledge or works are eligible for support. Funds for supplies and support of the research, scholarship or creative activities are provided through this program.

STUDENT CONFERENCE TRAVEL AWARD

The RSCA program supports students to present the results of the collaborative work at professional conferences. Mentors are also supported for travel with the student.

WE ARE ON FACEBOOK

SUNY New Paltz Undergraduate Research, Scholarship and Creative Activities Group
<http://www.facebook.com/group.php?gid=44644830786>



Join the SUNY New Paltz RSCA group
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For more information, please visit our web page: www.newpaltz.edu/studentresearch. You may also contact: Maureen Morrow, Director, Undergraduate RSCA morrowm@newpaltz.edu
257-3776

POSTER SESSIONS

(listed alphabetically by mentor's department)

5:15-5:55p Poster session I

ANOTHER NORTH AMERICA IS NECESSARY: PERCEPT Emily Korona (Anthropology)
PERCEPTIONS OF POLITICS IN PORTO ALEGRE Adrianna Mesquita (Anthropology, Latin American Studies)

THE EFFECTS OF X-RAYS ON GENETIC ANALYSIS Hana Akimoto (Biology, Anthropology) RECOMBINANT EXPRESSION OF DASH COMPLEXES Kemone Grant (Biology)

INTERACTIONS WITH HUG1 PROTEIN Amanda DeCotes (Biology)

CYTOTOXICITY OF RU COMPOUNDS AGAINST CANCER Sanjana Reddy, Jordan Sumliner, Liza Valdivia (Biology and Chemistry)

SYNTHESIS OF alpha-PINENE DERIVATIVES Giovanna DeLuca, Daniel Cohan, Kevin Eames, Cynthia Colon (Chemistry, Biology)

SYNTHESIS OF MONOBACTAMS Destiny Rivera, Maria Rodolis (Chemistry)

RU alpha-KETOIMINATE COMPLEXES: BIFUNCTIONAL CATALYSTS Jordan Sumliner (Chemistry)

SYNTHESIS AND SEPERATION OF RU-THIOCYANATO ISOMERS Nancy Nazzaro, Darryl Steffen (Chemistry)

FINDING "TRUTH" IN AMERICAN HISTORY CLASSROOMS Shannon Gryntysz (History)

JUROR PERCEPTIONS OF SEX OFFENDERS Bobbie Coleman (Psychology)

THE ROLE OF NON-ADJACENT LETTERS IN READING Denise Donatien-Coder (Psychology)

STARTING IN THE MIDDLE Brittany McKeldin (Psychology, Student Development)

UNDERPINNINGS OF LIBERAL AND CONSERVATIVE THOUGHT Ayla Fleming (Psychology)

IMAGINING VISIBILITY AND THE LESBIAN AVENGERS Ellice Litwak (Sociology and Women's Studies, Sociology)

GLOBALIZATION, FAIR TRADE AND LOCAL FOOD Christopher Utzig (Sociology, Geography)

ASSISTANT DIRECTING BLOOD WEDDING Rachael Brandt (Theatre Arts)

5:55-6:35 Poster session II

ARCHITECTURE IN ISLAMIC MANUSCRIPT ILLUMINATION Hannah Van Wely (Art History)

AFFORDABLE AND COLLAPSABLE PAPERMAKING STUDIO Melissa Mandel (Art/ Printmaking)

THE AFRIKAN WORLDVIEW AND BLACK COMMUNICATION Kathryn Hall (Black Studies/ Linguistics)

COLORFULLY INTEGRATING THE PSI INTO UNDERGRAD ED Kara Gluc (Biology)

MOLECULAR STUDIES OF THE NR1D FAMILY OF NRS Zuchra Zakirova (Biology)

ADOPTING ORPHAN NUCLEAR RECEPTORS IN CIONA Christopher Cahn (Biology)

THERMODYNAMICS OF OLIGONUCLEOTIDE FOLDING Chelsea Hull (Chemistry)

EXAMINING THE ISSUES SURROUNDING ADHD Jamie Morvitz (Education)

ENERGY AWARE SCHEDULING IN HETEROGENEOUS SYSTEMS Venkateswaran Shekar (Electrical and Computer Engineering)

WAR AND WORDS: SHELL SHOCK AND MODERNISM Michelle S. Kramisen (English,

Communication)

BLURRING BOUNDARIES BETWEEN FICTION AND NONFICTION Lee Conell (English)

GOOD GIRLS AREN'T FUNNY: WOMEN'S STRATEGIC USE OF HUMOR Kiersten Henry
(English)

AN OVERVIEW OF THE PICARD METHOD FOR SOLVING ODES Olga Stulov
(Mathematics)

PRACTICAL APPLICATIONS OF CONFORMAL MAPPING Timothy Ivancic, Ryan
Vinson (Mathematics)

HOW HUMOR STYLES AFFECT MATE ATTRACTION Rachael Carmen (Psychology)

BUILD-A-PROFESSOR Anastasya Yakhkind (psychology)

INSTRUCTIONAL IMPORTANCE STUDY Sean Wilson (Psychology)

WHY DON'T MASTERY GOALS PROMOTE STUDENTS' SUCCESS? Sarah Wolfe
(Psychology)

6:35-7:15p Poster session III

THE EFFECTS OF DIETARY REGIME ON DROSOPHILA Jannett Dinsmore (Biology)

SURVEY OF NUTRIENT-PROCESSING BACTERIA Denni Catalano (Biology)

THE EFFECTS OF pH LEVELS ON USPA GENE EXPRESSION Sarah Porzelt (Biology)

ALPHA PINENE DERIVATIVES AND MUSCA DOMESTICA Angela Acevedo (biology and
chemistry)

MELANOGENESIS STIMULATORY EFFECTS OF H. MAXIMUM shyam prajapati
(Biology, Chemistry)

TYROSINASE STIMULATION BY P. CORYFOLIA Alisha Philip, Igor Gembitsky
(Chemistry, Biology)

STUDY OF A BIOSURFACTANT MADE BY B. BACTERIOVORUS Kimberly Lundberg
(Geology, Chemistry)

PALEO-ECOLOGICAL COMPARISON BETWEEN THREE E.E. SUB UNITS Christina J.
Hartwell (Geology)

WATER QUALITY ANALYSIS OF SURFACE WATER Kevin Kolvenbach, Adam Roscino,
Allison Platsky (Geology)

SKUNNEMUNK OUTLIER STATIGRAPHIC INVESTIGATION Tom Schramm (Geology)

ABANDONED: LAW AND LAWYERS LEFT BEHIND Joshua Simons (Political Science)

CIVIL WAR AND THE SPREAD OF MALARIA Leah Hirsch-Cotter (Political Science)

THE WEAKEST NONPROLIFERATION REGIME: BWC Ivan Pavlenko (Political Science
and International Relations)

THE EFFECTS OF BELIEF IN DETERMINISM Viola Silvan (psychology)

CONFIRMING THE METHODOLOGY OF OUR PRIMARY STUDY Adam Villela, Joanna
Rousseau (Psychology)

NON-VERBAL BEHAVIOR IN THE EMPLOYMENT INTERVIEW Anna Lange, Stacey
Smiel, Jeff Cummins (Psychology)

WHY WOMEN ASK FOR DIRECTIONS Kate Remauro, Regina Musicaro

PERFORMANCE AND PRODUCTION Larissa Goldberg (Theatre Arts)

ANOTHER NORTH AMERICA IS NECESSARY: PERCEPT

Emily Korona (Anthropology, undergraduate)
Faculty Mentor: Benjamin Junge (Anthropology)

This poster presents issues and findings from my research with Dr. Junge on U.S. and Canadian non-governmental organizations' (NGOs) perceptions of the World Social Forum (WSF), an international summit critical of corporate or 'neoliberal' globalization. Since its first meeting in 2000, the WSF has brought together tens of thousands of scholars, activists, policymakers and journalists. Unlike previous WSFs, the 2008 forum took place online, that is, NGOs carried out local political mobilizations and subsequently posted these actions on a centralized website. Inspired by this innovative use of technology for transnational social justice organizing, we designed an online survey to gauge U.S. and Canadian NGOs' institutional characteristics, uses of technology, and previous knowledge and experience with the WSF and its critique of neoliberalism.

Our objectives in this research were to examine the potential utility of the Internet as a tool for transnational grassroots organizing and to better understand low levels of U.S. and Canadian NGOs in the WSF to date. This poster presents our study's background, objectives, methodology, results and significance of major findings, with special focus on characteristics which are significantly

PERCEPTIONS OF POLITICS IN PORTO ALEGRE

Adrianna Mesquita (Foreign Languages, Latin American Studies, undergraduate)
Faculty Mentor: Benjamin Junge (Anthropology, Latin American Studies)

In our research, we examine the perceptions of grassroots leaders in Porto Alegre, Brazil, regarding various aspects of local politics, including the upcoming mayoral elections. The capital of Brazil's southernmost state, Porto Alegre has become a reference for the new Latin American Left. It is unique in being the first large city to have a participatory budget (decided upon by volunteer community representatives rather than elected city council politicians), and it was placed on the radar for being the host to the World Social Forum for several years. We have chosen the Porto Alegre region known as "Cristal" for the project because it is where the majority of Professor Junge's research was conducted for the 2008 mayoral elections. Throughout the semester, I have been listening to transcribed interviews of grassroots leaders and I have coded them in order to identify recurring themes. For this poster presentation, I will summarize grassroots leaders' assessments of the coming elections and examine how gender enters into perceptions of local politics (both the gender of the speaker and the gender of the politician being spoken about). As of now, a range of different perceptions have been discovered and will be presented.

ARCHITECTURE IN ISLAMIC MANUSCRIPT ILLUMINATION

Hannah Van Wely (Art History, undergraduate)
Faculty Mentor: Jaclynne J. Kerner (Art History)

Although the field of Islamic art includes both art and architecture, the interpretation of architectural imagery is not a popular theme in the analysis of Islamic manuscript illumination. This elicits the question of how architecture, including both its physical material and negative space, changes as it moves from the category of 'architecture' into the category of 'art.' This paper surveys architecture's role as two-dimensional forms in Islamic manuscripts. These examples include folios from Turkey, greater Iran, and India from the fourteenth through the seventeenth centuries. Architectural imagery within illuminated manuscripts acts as either subject matter or setting. Where architecture is the subject, the illustrated folio typically documents a site or building construction. Settings are incorporated into narratives of popular tales, the lives of political figures, or complement religious teachings. Additionally, they are used to determine relationship between space and time or to emphasize elements of the narration by contrasting size, shape, or illusory space within the composition. This study proposes that the context of an architectural image is not limited to the utility of the structure. Rather, context is drawn from the manuscript, patron, artist, and visual composition. Of all the purposes that architecture serves as either subject or setting, its principal use is to allocate folio space for elaborate decoration using repetitive floral or geometric pattern.

AFFORDABLE AND COLLAPSABLE PAPERMAKING STUDIO

Melissa Mandel (Art/Printmaking, undergraduate)
Faculty Mentor: Jill Parisi-Phillips (Art/ Printmaking)

Under the sponsorship of AYURE I designed and built a papermaking studio from easily obtainable and affordable materials. My intent was to present students with the means to further their creative research and to also help make the printmaking department more sustainable; paper being its greatest resource and waste. It was essential that the studio be collapsible so as to easily exist in an already active studio space. Furthermore I simplified the complicated molds and deckles used in papermaking with more cost efficient and accessible resources. Eastern and Western methods of making paper were tested for their durability, structure and preparation processes. The fibers were also tested for their reactions to various artistic techniques. I plan for this studio to be a long-term resource for my fellow students as well as a place in which classes can be taught in the future. Currently this facility is fully operational and students have already begun to take advantage of it, several utilizing this resource for their thesis shows. In addition a portfolio of the various sheets formed has been assembled along with a log of notes, recipes for the preparation of fibers and instructions and directions for preparing and pulling sheets. These results will be held on record in the printmaking department.

THE AFRIKAN WORLDVIEW AND BLACK COMMUNICATION

Kathryn Hall (Black Studies and Linguistics, undergraduate)

Faculty Mentor: Margaret Wade Lewis and Karanja Keita Carr (Black Studies/
Linguistics)

This essay attempts to highlight the relation between Linguistics and Black Studies. As an interdisciplinary academic subject area, Black Studies attempts to engage information gained from all fields of knowledge (i.e. psychology, sociology, history, politics, literature, aesthetics etc.) to gain useful information about the nature of Black people and the Black condition not only in America, but also in the African Diaspora and on the African continent. This essay attempts to highlight the ways in which Black Studies can augment the understanding of language as it pertains to Black people. The Afrikan Worldview as put forth by Vernon Dixon and a host of Black psychologists, social scientists and philosophers emphasizes the need for a holistic approach in the study of Black people. Based on this worldview concept, this paper attempts to highlight the need for a more holistic approach to understanding Black language. By evaluating all communicative forms of Black people we can better understand the way Black people use language as speech is one aspect of communication. After a review of the literature currently available on the Afrikan worldview and on Black language evaluation, this study points to a lack of information engaging both fields critically. The examples used in this study are based on Black English and African-American communication strategies. By focusing on various speech acts and rhetorical techniques such as 'Call and response' and 'Creative Repetition'

THE EFFECTS OF X-RAYS ON GENETIC ANALYSIS

Hana Akimoto (Biology, undergraduate)

Faculty Mentor: Jennifer Waldo, Ken Nystrom (Biology, Anthropology)

X-rays are commonly used in anthropological field research to detect the pathology of the skeletal system in ancient humans. However, X-rays are known to be harmful to the human body. X-rays are a form of ionizing radiation which can remove electrons from the targeted atoms leading to charged ions. Unnatural chemical reactions inside the cells can then occur leading to a breakage of DNA strands. The cells that have broken DNA strands will then die or mutate. To observe if the use of X-rays on ancient humans affect researchers' ability to extract DNA for genetic analysis, we exposed plasmids to different doses of X-rays. Plasmids were placed under six varied times of exposure under the X-ray machine. After exposing the plasmids to the X-rays, we amplified the genes using PCR techniques and analyzed the DNA through gel electrophoresis. To date, there has been no significant effect of X-ray exposure to genetic analysis. This may be because the plasmids are put under too many PCR cycles. We are in the process of reducing the amount of cycles to optimize the amount of PCR product.

RECOMBINANT EXPRESSION OF DASH COMPLEXES

Kemone Grant (Biology, undergraduate)

Faculty Mentor: Dr. Jennifer Waldo (Biology)

Candida albicans is a diploid fungus found in the body's normal flora. The DASH complex has been identified in other yeast species such as *S.cerevisiae*, *S.pombe*, and 9 of the 10 proteins have been identified in *Candida albicans*. The DASH complex was identified to be essential for viability in *S. cerevisiae*, and non essential for viability in *S.pombe*. The DASH complex is named after the 10 proteins that makes it up, and is involved in the process of mitosis. The DASH complex is located at the kinetochore of the cell. This is a site on each sister chromatid located at the centromere, and is composed of many proteins. The goal of this experiment is to understand the function of the DASH complex in *C. albicans*. Our main question is How the nine proteins fit together? This experiment focuses on *dad1* and *dad3*. We have successfully cloned *dad1* and *dad3*, and expressed them in bacteria through recombinant technology. At this point, we are trying to fit both *dad1* and *dad3* together and examine their behavior. We expect that once *dad1* and *dad3* forms a complex and is expressed in bacteria then we can start making that complex bigger.

INTERACTIONS WITH HUG1 PROTEIN

Amanda DeCotes (Biology, undergraduate)

Faculty Mentor: Jennifer Waldo (Biology)

The Hug 1 protein in *Saccharomyces cerevisiae* is a protein that is part of an important process in the cell cycle that repairs DNA damage called checkpoints. These checkpoints include protein components that sense the damage and activate responses that inhibit cell cycle progression and initiate repair. In this study we have been carrying out experiments to determine which proteins interact with Hug1 within the yeast cells. Previous studies show that Hug1 is not easily handled as an isolated protein. We have cloned the Hug1 gene into a variety of bacterial expression vectors that produce different tagged versions of the protein. These vectors were tested in different *E. coli* expression systems for protein production. One vector and expression system was selected for further analysis. The analysis included MonoQ ion exchange and Nickel column chromatography. We also used dialysis and different salt concentrations to determine which concentration produced the Hug1 with the lowest concentration of salt. Results of SDS-PAGE and chromatography show that the protein bound to the MonoQ column and the protein re-bound to the Nickel beads. Studies to isolate the yeast protein that interact with Hug1 are underway.

COLORFULLY INTEGRATING THE PSI INTO UNDERGRAD ED

Kara Gluc (Biology, graduate)

Faculty Mentor: Jeff Reinking (Biology)

Purification of recombinant proteins is used in many different areas of molecular biology, and is a useful tool in biotechnology. The purpose of my project is to develop a laboratory exercise for students to learn how to complete state-of-the-art purification of recombinant proteins and provide a gateway for follow-up inquiry-based investigations. The DNA constructs used to express proteins are acquired from the Protein Structure Initiative, originate from several different kinds of prokaryotes and were specifically selected for visible coloration upon purification. This goal of this project is the selection of approximately twelve well-behaved and vividly colored proteins that can be tractably handled in capstone style undergraduate teaching lab out of twenty-nine recombinant clones for proteins. We will begin with twenty-nine recombinant clones that have been partially characterized by the structural genomics pipeline and reported to be highly expressed, soluble and colored. Upon transformation into an expression strain of *E. coli*, the constructs will be induced to produce specific recombinant protein that will subsequently be purified using Nickel affinity chromatography. We will quantitate the protein produced and use SDS-PAGE to estimate the degree of purity of the final product to determine the twelve 'best' clones for use in the eventual teaching lab.

MOLECULAR STUDIES OF THE NR1D FAMILY OF NRS

Zuchra Zakirova (Biology, undergraduate)

Faculty Mentor: Jeff Reinking (Biology)

Nuclear receptors (NRs) are a class of proteins found within the interior of cells that are responsible for sensing the presence of hormones and certain other small molecules. In response, these receptors are able to interact with other proteins to regulate the expression of specific genes thereby controlling development, metabolism, and homeostasis of the organism. We focused our studies on the NR1D family of NRs, which have recently been shown to bind to heme moieties and may be regulated by diatomic gas signaling and/or cellular reduction-oxidation potential. The NR1D family of NRs are unique in its ability to bind to heme moieties, in that heme is not a "typical" ligand for NRs. Thusly we proceeded to investigate the functionality of NR1D family of NRs in its ability to bind heme in a variety of species. We have expressed members of the NR1D family of NRs from *Drosophila*, Shrimp, and Humans recombinantly in bacteria. Then, we purified our "Red" proteins using Nickel affinity chromatography, as well as analyzed our results.

ADOPTING ORPHAN NUCLEAR RECEPTORS IN CIONA

Christopher Cahn (Biology, undergraduate)
Faculty Mentor: Jeffrey Reinking (Biology)

Nuclear receptors (NRs) are a large class of protein molecules involved in mediating the process of eukaryotic DNA transcription. They function by binding directly to a strand of DNA and recruiting other proteins to regulate the expression of genes that function in vital processes including homeostasis, development and metabolism of organisms. We use molecular techniques such as polymerase chain reaction for both DNA amplification and bacterial colony screening, heat shock transformation with plasmid expression vectors and DH5alpha competent cells to synthesize the putative ligand binding domains from *C. intestinalis* nuclear receptors, and nickel affinity chromatography to purify them. NR activity is dependent on the presence of a small molecule ligand, which are membrane soluble and often hormone-derived. They are therefore excellent candidates for pharmaceutical intervention and are the target molecules for 13 percent of current FDA approved drugs. Since the structure of the ligand binding domains (LBDs) of NRs is evolutionarily well conserved, the study of *C. intestinalis* LBDs is of significant potential value to human pharmaceutical research. Orphan NRs are those for which the natural ligand is not known. Through the identification of natural ligands for orphan *Ciona* nuclear receptors, we hope to provide insight into human nuclear receptor activity by homology.

THE EFFECTS OF DIETARY REGIME ON DROSOPHILA

Jannett Dinsmore (Biology, undergraduate)
Faculty Mentor: Aaron Haselton (Biology)

Dietary restriction has been shown to extend lifespan and alter nutrient metabolism in all model organisms studied to date. The intent of this research is to examine the effects of dietary regime on post-starvation ingestion of liquid diets in order to further characterize prandial behavior in *Drosophila melanogaster*. Adult flies were aged for 10 days on 1 of 4 solid diets varying in caloric/nutrient content. Our results suggest that dietary restriction in *D. melanogaster* leads to an exaggerated bias of post-starvation feeding toward calorie-rich food relative to control and overfed flies, in spite of the fact that DR flies tolerate starvation stress better than control and overfed flies. Ongoing studies are investigating the effects of aging on post-starvation compensatory ingestion.

SURVEY OF NUTRIENT-PROCESSING BACTERIA

Denni Catalano (Biology, undergraduate)
Faculty Mentor: Jason Valens (Biology)

Marine bacteria play an important role in controlling nutrient levels in coral reef environments. Excess nutrients, such as phosphates and nitrates can endanger coral reefs. Because the identities of all the players of bacteria are not known, the purpose of this research is to identify different species of bacteria that are involved in nutrient cycling. In order to identify the different species PCR was used with 16s primers. 16S rRNA gene sequences contain various regions which can provide species-specific signature sequences useful for bacterial identification. This amplified fragment was then inserted into a vector, PUC18, which contains multiple cloning sites. The vector, which is circular, was linearized using restriction enzymes, and incubated with the fragment of interest under appropriate conditions with an enzyme called DNA ligase. Following ligation the vector with the insert of interest is transformed into cells. The transformed cells were cultured. There was a need to identify the cells that had been successfully transformed with the vector construct containing the desired insertion sequence in the required orientation. Selectable antibiotic resistance markers allow only cells in which the vector has been transformed to grow. Additionally, the cloning vectors may contain color selection markers which provide blue/white screening on X-gal medium. Further screening involved using T7 primers in the PCR reaction. Currently, we are still purifying and growing DNA.

THE EFFECTS OF pH LEVELS ON USP A GENE EXPRESSION

Sarah Porzelt (Biology, undergraduate)
Faculty Mentor: Maureen Morrow (Biology)

Universal stress proteins are generated in the bacteria *Escherichia coli* from the *uspA* gene in response to multiple environmental stresses that include starvation, heat and acid exposure. These proteins serve to help sustain the cells so that they can survive in an environment that might otherwise kill them. The role of *usp* proteins and the manner in which they protect *E. coli* is not fully understood at this time. In this experiment we studied *E. coli* AF634, a strain that has been constructed to express *lac-Z* downstream to the *uspA* gene. If the *uspA* gene is induced in the cells, it will result in the expression of *lac-Z* that can be readily measured using a beta galactosidase assay. Previous work in our lab has demonstrated that the AF634 cells expressed the *uspA* gene in response to strong acids. Our experiment will test the cellular response to bases, and compare the levels of gene expression for both acidic and basic pH levels. The bacterial cells will be grown at various pH levels and then beta-gal assayed. The results from this experiment may help to better understand *uspA* genes in *E. coli*, and ways in which the growth of *E. coli* can be prevented in foods in which it is known to proliferate.

ALPHA PINENE DERIVATIVES AND MUSCA DOMESTICA

angela acevedo (biology, undergraduate)

Faculty Mentor: Aaron Haselton and Preeti Dhar (biology and chemistry)

Musca domestica, commonly known as the house fly, is capable of transmitting various diseases to humans and other animals. Many chemicals currently used to deter insect vectors of disease are coming under scrutiny due to their toxic effects on non-target species. Recent research investigating alternative insect control measures has revealed the repellency of terpenoid compounds containing alpha- and beta- pinene against mosquitoes. Our hypothesis is that alpha- and beta- pinene will have similar effects on the house fly. To test our hypothesis, behavioral bioassays were conducted using a fly repellometer. Groups of 20 male and female flies were exposed to filter paper impregnated with solutions of alpha- and beta- pinene for a total of ten minutes. Fly responses (none, towards, or away from the filter paper) were recorded and analyzed. Data collected to date indicate that 25% solutions of alpha- and beta- pinene are repellent to *M. domestica*. Future studies will examine the effects of different alpha- and beta- pinene concentrations and the effects of structurally modified compounds on fly behavior.

CYTOTOXICITY OF RU COMPOUNDS AGAINST CANCER

Sanjana Reddy, Jordan Sumliner, Liza Valdivia (Biology, undergraduate)

Faculty Mentor: Maureen Morrow, Daniel Freedman (Biology and Chemistry)

The ligand exchange kinetic properties of Ruthenium (Ru)(II) and Ru(III) complexes are very similar to those of Pt(II) complexes such as cisplatin. As cisplatin has already been determined to be an anticancer agent, Ru is also being studied for that purpose. It is hoped that the Ru complexes will have lower general toxicity and greater stability than Pt complexes. Some Ru(II) complexes have previously been determined to be cytotoxic to ovarian and non-small cell lung cancer cells. In this study, the cytotoxicity of several [(p-cymene)Ru(beta-ketoiminate)Cl] compounds against non-small cell lung cancer cells (A549) was determined. The compounds were prepared by first deprotonating the desired beta-ketoimine and then reacting the resulting beta-ketoiminate with [(p-cymene)RuCl₂]₂. Cells were grown in 96-well plates containing various concentrations of the test Ru(II) compounds. Growth inhibition was determined using the sulforhodamine B colorimetric assay (SRB assay). SRB binds to proteins of the surviving cells and is an indicator of the amount of cell growth. We first optimized the procedure for our cells. The cytotoxicity of our compounds was then compared to the growth with solvent (DMSO-negative control) and growth with a published cytotoxic Ru compound (positive control). We have found several compounds that are more cytotoxic than published compounds. Testing of additional compound may reveal an important structure-function relationship.

MELANOGENESIS STIMULATORY EFFECTS OF H. MAXIMUM

shyam prajapati (Biology, undergraduate)

Faculty Mentor: Maureen Morrow, Preeti Dhar (Biology, Chemistry)

The phototoxic properties of *Psoralea corylifolia* have been used in South Asian folklore medicine to treat vitiligo, a condition in which the loss of melanocytes results in the loss of skin pigment finally resulting in patches of white skin. Though the mechanism is unknown, *P. corylifolia* contains furanocoumarins which are responsible for stimulating melanin production. A plant native to North America, *Heracleum maximum*, also contains high levels of furanocoumarins and induces melanogenesis, but is not known to treat vitiligo. Earlier bioassays have found *H. maximum* to have melanin stimulating properties as well as high toxicity. The purpose of this work is to examine the potential of each plant as a possible treatment for vitiligo or other pigment production disorders. The current research involves a Soxhlet extraction of the powdered seeds of *P. corylifolia* and *H. maximum* to obtain crude ethanolic extracts for both the plants. These ethanolic plant extracts were then subjected to the murine B16 melanoma bioassay. The B16 cells were grown in the presence of each sample at varying concentrations and the melanin production monitored via photometric measurements. Cell proliferation during the exposure period was also measured to examine toxicity and standardized melanin production. We will present the results of our analysis.

SYNTHESIS OF alpha-PINENE DERIVATIVES

Giovanna DeLuca, Daniel Cohan, Kevin Eames, Cynthia Colon (Biology, undergraduate)

Faculty Mentor: Preeti Dhar, Maureen Morrow (Chemistry, Biology)

Alpha pinene is a terpene with known antimicrobial activity. The purpose of our research was to skeletally modify alpha pinene and study the effect of skeletal changes on the antimicrobial activity. Eight skeletally modified alpha pinene derivatives were synthesized using literature modified procedures that took over two years. During the summer of 2008, the final purification and bioassays on the skeletally modified alpha pinene derivatives were carried out. The antimicrobial activity was measured using thin layer chromatography (TLC) bio-autobiographic assays. The antimicrobial activity of the compounds was tested against four microorganisms: two gram negative bacteria, *Escherichia coli* and *Pseudomonas aeruginosa*, two gram positive bacteria, *Staphylococcus aureus* and *Micrococcus luteus*, and a unicellular fungus, *Candida albicans*. Results show that all of the skeletally modified alpha pinene derivatives (eight) were significantly less antimicrobial than their respective starting materials (R alpha-pinene and S alpha-pinene). We examined these due to their hydrophobicity, lipophilic nature, and size to begin to determine the role of each in antimicrobial activity. We are continuing our research on the derivatives with a particular interest in one (named 13). Compound 13 sparked our interest because of its lethal activity towards prokaryotes and seemingly no effect on eukaryotic fungi. This could be useful if compound 13 could kill off unwanted microbes without harming their hosts.

TYROSINASE STIMULATION BY P. CORYFOLIA

Alisha Philip, Igor Gembitsky (Chemistry, undergraduate)

Faculty Mentor: Preeti Dhar, Dr. Maureen Morrow (Chemistry, Biology)

Psoralea coryfolia, a plant indigenous to India, is used in herbal medicine for the treatment of the skin disorder vitiligo by inducing hyperpigmentation. *Heracleum maximum*, a plant native to Native America, also induces hyperpigmentation. Since tyrosinase is the rate-limiting enzyme in melanin production, enzymatic assays were performed to see if the plants induced melanogenesis by stimulating tyrosinase. Two Soxhlet extraction of both *P. coryfolia* and *H. maximum* in ethanol were performed, first under boiling - the "warm" extracts - and second keeping the temperature below 40 degrees C - the "cool" extracts. Ethanol was removed afterward using a rotary evaporator. Stock solutions were prepared by dissolving the extracts in DMSO. Subsequent solutions were prepared by two-fold dilution. Tyrosinase from mushroom, L-tyrosine, and the varying concentrations of warm *P. coryfolia* extract were placed into 300 microliter wells in a phosphate buffer solution. The absorbance at 475 nm was taken every two minutes for ten minutes and compared to the negative control of only DMSO and the positive control of xanthotoxin, a known tyrosinase stimulant. The solutions stimulated tyrosinase at higher concentrations, while lower concentrations had an inhibitory effect. This suggests that, at significant concentrations, *P. coryfolia* can increase melanin production through the stimulation of tyrosinase. Further experiments include using the warm *H. maximum* extract and both cold extracts.

THERMODYNAMICS OF OLIGONUCLEOTIDE FOLDING

chelsea hull (Chemistry, undergraduate)

Faculty Mentor: Pamela St. John (Chemistry)

Short oligonucleotides can form stable single stranded structures of DNA and RNA. One type of structure can occur from a strand folding back on itself and linking up with complementary bases within the sequence to form a hairpin. Hairpin structures are of interest because they are common in RNA viruses where they play an important role in binding specificity. Model sequences containing DNA and a mixture of DNA and LNA (DNA-LNA), composed of GAAA tetraloops with varying numbers of complementary bases within the stem have been used to help understand how LNA affects the structures. Melting curves were obtained for both DNA and DNA-LNA sequences using UV-Vis spectroscopy. The melting temperatures, assuming a two-state model (folded-unfolded), were obtained by finding the maximum in the first derivative of the temperature versus absorbance curve and by plotting the fraction unfolded versus temperature then finding the temperature where the fraction unfolded equals one half. The enthalpy and entropy of melting for the sequences were determined using a van't Hoff analysis and a nonlinear least square fit of the melting curve. The enthalpy was also determined by finding the slope of the melting curve at the melting temperature. Similarly, this was done for RNA and RNA-LNA. Comparisons show that the all DNA hairpin is more stable than ones that include LNA substituted into the loop and that LNA has a similar destabilizing effect in RNA, but it is not as strong.

SYNTHESIS OF MONOACTAMS

Destiny Rivera, Maria Rodolis (Biology, undergraduate)
Faculty Mentor: Preeti Dhar (Chemistry)

Beta -Lactams are the common structural element in widely used antibiotics such as penicillin. Antibiotics that contain the Beta-lactam ring work by inhibiting cell wall synthesis. Widespread use of Beta-lactams has caused an alarming increase in bacterial resistance. Certain bacteria have been able to develop counter-measures to traditional drug therapies by creating the enzyme Beta-lactamase which serves to 'break' the Beta-lactam ring, effectively abolishing the antibiotic's effectiveness therefore creating the need for drugs with more specific antimicrobial activity. Some of the known monobactams are found to be resistant to most Beta-lactamases. The purpose of this project was to synthesize a few functionalized monobactams and their derivatives. The general strategy used for the synthesis of monobactams was treatment of the suitable alkene with chlorosulfonyl isocyanate, followed by the addition of KOH/ NaHSO₃ to give the monobactam. These compounds would later be tested for their antimicrobial potential, using TLC bioautographic assays. Synthesis of these compounds will be presented.

RU α -KETOIMINATE COMPLEXES: BIFUNCTIONAL CATALYSTS

Jordan Sumliner (Chemistry, undergraduate)
Faculty Mentor: Daniel Freedman (Chemistry)

We have prepared and characterized the complexes [(p-cym)Ru(L₂)Cl] (p-cym = 6-p-cymene; L₂ = CH₃C(O)CHC(N(o-OHC₆H₄))CH₃, CH₃C(O)CHC(N(p-OHC₆H₄))CH₃, CH₃C(O)CHC(N(o-OCH₃C₆H₄))CH₃, CH₃C(O)CHC(N(o-OH,p-NO₂C₆H₃))CH₃). All the complexes were tested as catalysts for the transfer hydrogenation of acetophenone in methylene chloride with a 1:1 mole ratio of triethylamine:formic acid. Only compounds with o-OH groups were active catalysts. The o-OH and o-OH,p-NO₂ complexes gave 100% and 30% conversion respectively, after 2 hours reaction with 100:1 acetophenone:catalyst ratio. We propose a mechanism consistent with this data in which these complexes act as bifunctional catalysts.

SYNTHESIS AND SEPERATION OF RU-THIOCYANATO ISOMERS

Nancy Nazzaro, Darryl Steffen (Chemistry, undergraduate)
Faculty Mentor: Daniel A. Freedman (Chemistry)

The synthesis and attempts to purify the thiocyanate linkage isomers of [(eta⁶-arene)Ru(bpy)(thiocyanate)]PF₆ (arene = benzene, mesitylene, hexamethylbenzene; bpy = 2,2'-bipyridine). Mixtures of the linkage isomers are prepared by reacting the [(eta⁶-arene)Ru(bpy)Cl]⁺ with KSCN in methanol. Attempts to separate the linkage isomers by chromatography on a stationary phase consisting of Hg(NO₃)₂ coated aluminum oxide will be reported. We also report and discuss the dependence of the equilibrium constant between the different linkage isomers on the arene substitution.

STUDY OF A BIOSURFACTANT MADE BY B. BACTERIOVORUS

Kimberly Lundberg (Geology, undergraduate)
Faculty Mentor: Dr. Megan Ferguson (Chemistry)

Biosurfactants are bacterially-derived molecules with both polar and nonpolar parts. This gives them unique chemical properties that help bacteria modify their biofilm formation ability, cell motility, or cell surface properties. Here, we isolated and investigated the structure of a membrane bound biosurfactant produced by a host independent form of the bacterium *Bdellovibrio bacteriovorus*. Bacteria are grown in a rich growth medium. Biosurfactant was obtained by centrifuging the cells and extracting the cell pellets with acetone. Previous research has shown the biosurfactant structure contains an isoprene chain with a polar head with a molecular mass of 726 amu. Tests of the biosurfactant extract with Direct Exposure Probe Mass Spectrometry confirmed the presence of the mass 726 compound and showed that electron bombardment systematically breaks off portions of the isoprene chain in 68 amu sections. Purification of the crude acetone extract was achieved by TLC (mobile phase, 50:50 acetonitrile: water). Limiting duration of exposure to silica gel and UV radiation minimized compound degradation. A compound library software search found a possible structural match which contained hydroxamic acids. The Csaky Test for hydroxamic acids is currently being used to assess the presence of these functional groups.

EXAMINING THE ISSUES SURROUNDING ADHD

Jamie Morvitz (Elementary Education, undergraduate)
Faculty Mentor: Barbara Chorzempa, Jane Sileo, Spencer Salend (Education)

Attention Deficit Hyperactivity Disorder (ADHD) is a complicated and controversial topic that tends to become oversimplified in discussion. This paper began as an attempt to determine over-diagnosis of ADHD, but it became clear that this could not be done conclusively. As a result, this paper evolved into an overview of ADHD and the issues surrounding diagnosis. Specifically, this paper presents various aspects to consider when discussing ADHD. It begins with a definition of ADHD and then explains how it came to be classified as a disorder. The various potential causes of ADHD and the difficulties involved in classifying the symptoms into one disorder are discussed. Diagnosis procedures in the United States and other countries as well as the percentage of individuals diagnosed in other countries are also presented for comparison. Finally, the paper describes problems that might occur when children are either mis-or undiagnosed. Conclusions, based on research from interviews found online, journal articles, and books on ADHD, are twofold. First, it is apparent that more research must be completed to determine whether there is one scientific reason for the symptoms and thus one test that can be devised to help with diagnosis. Second, it is evident that a correct diagnosis can be made only if time is allowed for all the procedures (using more than just questionnaires) to be followed. It seems that over-diagnosis would be a less palpable question if this were done.

ENERGY AWARE SCHEDULING IN HETEROGENEOUS SYSTEMS

Venkateswaran Shekar (Electrical Engineering, graduate)

Faculty Mentor: Baback Izadi (Electrical and Computer Engineering)

With the emergence of large scale heterogeneous computing environments, there is a need for a matching and scheduling system which allows Directed Acyclic Graph (DAG) structured applications to share network resources. Taking advantage of Dynamic Voltage Scaling (DVS) technology and Mobile Agents, we have designed a system that schedules DAGs by taking into account deadline constraints as well as a power budget. DVS circuits have been widely adopted in many computing systems to provide trade off between performance and power consumption. Whereas, Mobile Agent systems have been mostly used for applications such as software distribution and network management. This paper investigates utilizing mobile agents to schedule tasks such that both tasks' deadline as well as processors' power budget is taken into account.

WAR AND WORDS: SHELL SHOCK AND MODERNISM

Michelle S. Kramisen (English, Organizational Communication, undergraduate)

Faculty Mentor: Vicki Tromanhauser, Dudley Cahn (English, Communication)

Twentieth-century literature explored the decline of the sexual relationship occasioned by the mental and physical trauma of World War I. The works of Rebecca West, Virginia Woolf, Ernest Hemingway, Pat Barker, and other poets and critics, offer different examples of soldiers' reactions. As new information about shell shock emerged, beginning with the findings of Dr. W.H.R. Rivers, authors were able to write more detailed accounts on war experience. Physical injuries from combat impaired soldiers' sexual and emotional attachment as their injuries affected their ability to procreate or submit to sexual urges. Shell shock also played a major role in the characters' ability to relate to women emotionally and physically. Affected soldiers could no longer remember their families due to amnesia and could not ignore the memories of their comrades being brutally slaughtered. The breakdown of communication between soldiers after the war directly correlates to the destruction of their relationships and ability to connect with those they knew prior to combat. People who did not participate in the war did not place enough value on communication. Many times soldiers came home to their ignorant significant others who simply could not relate to their war experiences and horrors. Intimacy between men and women was strained, as an invisible distance opened up between them, compromising emotional attachment.

BLURRING BOUNDARIES BETWEEN FICTION AND NONFICTION

Lee Conell (English, undergraduate)

Faculty Mentor: Pauline Uchmanowicz, Dennis Doherty (English)

We typically call a piece of prose "fiction" if it is clearly imagined, and "nonfiction" if it is what we deem factual, based on something that truly happened. But are the boundaries always so clear? Where do these genre-designating lines begin and end? In a short critical essay, alongside a collection of original stories, my project explores the spectrum of creative nonfiction and fiction, examining the places where the boundaries between genres and the separation between narrator and author blur. The critical component of the project analyzes classic pieces of creative nonfiction from authors such as Virginia Woolf, George Orwell, and Joan Didion, as well as work we cannot comfortably call either fiction or nonfiction from writers such as Marguerite Duras and Paul Auster. In addition, through studying stories by Grace Paley, Ali Smith, and David Foster Wallace, this project deals with point of view and the methods in which certain fictional stories compromise (or pretend to compromise) the divide between the constructed speaker and the author. The models provided by the aforementioned writers ultimately serve as jumping off points and inspiration for the collection of original writing produced as a result of this project.

GOOD GIRLS AREN'T FUNNY: WOMEN'S STRATEGIC USE OF HUMOR

Kiersten Henry (Foreign Languages, undergraduate)

Faculty Mentor: Jan Schmidt (English)

The work of women humor writers has often been overlooked as a valuable source of insight into the status of women in modern society. My project combines research on the significance behind women's humor in creative nonfiction, the techniques that allow women to effectively employ humor in their writing, and the differences between men and women humor writers. Finally, the project will include my own creative nonfiction, employing the techniques that I found to be effective through my research. Works by Ellen Goodman, Nora Ephron, Dave Barry, and Regina Barreca will be studied.

PALEO-ECOLOGICAL COMPARISON BETWEEN THREE E.E. SUB UNITS

Christina J. Hartwell (Geology, undergraduate)

Faculty Mentor: Alexander J. Bartholomew (Geology)

The hypothesis of Coordinated Stasis proposes that various intervals in the rock record contain long-lasting faunal associations with little to no change in their composition. This study examines the stability of ecological niche partitioning across three Ecological Evolutionary sub-Units in the Middle Devonian of eastern North America: the Onondaga, Stony Hollow, and Hamilton faunas. The fauna of the Stony Hollow interval remains somewhat of an enigma as it is preserved in a very thin interval in most areas. Taxa of the Stony Hollow Fauna are known to have immigrated into the area from what were at the time more equatorial areas in northern Canada, displacing the existing suite of taxa for nearly one million years. This fauna is thought to have followed a major sea level rise and influx of warmer water down into the basin that was extant across the state at this time. Although the basic nature of the Stony Hollow Fauna is known as described above, a precise description of the ecological nature of the fauna has yet to be completed. To date only the brachiopod taxa of the Stony Hollow Fauna have been examined in any great detail while other abundant forms, such as bivalved mollusks and corals, remain almost completely unknown. With a more complete understanding of the unique fauna of this interval it will be possible to make broader comparisons of faunal change across wide areas of the globe and elucidate the precise mechanisms driving large-scale faunal change.

SKUNNEMUNK OUTLIER STRATIGRAPHIC INVESTIGATION

Tom Schramm (Geology)

Faculty Mentor: Alex Bartholomew (Geology)

The Green Pond and Skunnemunk outliers of southeastern New York and northeastern New Jersey contain Siluro-Devonian sediments separated by approximately 40 kilometers and more from the main New York-New Jersey outcrop belt. The Green Pond and Skunnemunk outliers have previously been determined to be thrust into place by the Allegheny Orogeny, having been transported from farther to the East. The sediments preserved in the outliers represent some of the earliest near shore Hamilton facies; the oldest sediments of the Catskill delta. Hamilton-age units in the Green Pond and Skunnemunk outliers consist of the Cornwall Shale, Bellvale Sandstone, and Skunnemunk Conglomerate.

Further investigation of these units is being conducted to determine patterns of sedimentation aimed at interpreting sea level cyclicity in hopes of refining the correlation of strata originally deposited further to the east to that of the rest of the Hamilton Group to the west. In addition, examination of the paleoecology of the strata will take place as these units provide a rare glimpse at some of the most proximal biofacies of the lower Hamilton interval preserved in the Appalachian basin. Once a detailed stratigraphic framework is in place, it will then be possible to compare biofacies through time; of especial interest will be the comparison of lower and upper Hamilton near-shore and paralic biofacies.

WATER QUALITY ANALYSIS OF SURFACE WATER

Kevin Kolvenbach, Adam Roscino, Allison Platsky (Geology, undergraduate)
Faculty Mentor: Shafiu Chowdhury (Geology)

The objective of this research was to perform a water quality analysis of ten bodies of surface water in the greater Newburgh, New York area. The samples occur in an area that is predominantly Ordovician shale bedrock, with a region of dolomitic limestone. The entire area is composed of a silty loam soil that is formed from glacial till. Field measurements were taken of each sample utilizing handheld field probes to test for pH, conductivity and dissolved oxygen. Additional experimentation and data collection was done in the lab using a spectrophotometer and an ion chromatograph. This analysis was performed to determine the common anion, cation and total organic carbon concentrations of the samples. Results revealed the quality of the water tested and gave insight into influence by anthropogenic, biologic and geologic effects. The dominant human effects were higher levels of nitrates from the use of fertilizers and sodium chloride due to the use of rock salt. Geologic influence seems to show relatively higher levels of calcium, magnesium and bicarbonate in bodies of water located in proximity to an area of dolomitic limestone which is within an area of predominantly Ordovician shale bedrock. The results reflect signatures typical of the underlying dolomitic geology. The bodies of water tested primarily fall within acceptable ranges of water quality. Although there are many factors that control the surface water quality, it is concluded that human influence on water quality.

FINDING "TRUTH" IN AMERICAN HISTORY CLASSROOMS

Shannon Gryntysz (History, undergraduate)
Faculty Mentor: Susan Lewis (History)

This thesis is an exploration of the way in which history is taught in public schools in the United States. The work focuses on heroism, while it tries to define myth, truth, and Americanism, looking closely at two historical figures, George Washington and Christopher Columbus. Works of key biographers of George Washington (including James Flexner, Mason L. Weems, and Barry Schwartz) and Christopher Columbus (Fernando Colon, and Geoffrey Symcox and Blair Sullivan), were considered, as well as works about the teaching of heroes in the classroom (i.e. Lies My Teacher Told Me, and Rethinking Columbus: The Next 500 Years). The thesis includes two lesson plans, which suggest a method of teaching about heroes and villains, rich in primary source analyses and diverse viewpoints. The goal of the proposed lesson plans is to encourage students to decide for themselves, with adequate research and upon thorough contemplation, whether or not those historical figures who are widely regarded as heroic or villainous deserve their reverence or notoriety.

AN OVERVIEW OF THE PICARD METHOD FOR SOLVING ODES

Olga Stulov (Mathematics, Electrical Engineering, undergraduate)
Faculty Mentor: Natalie Cartwright (Mathematics)

In this talk, we present Picard's Method for solving Initial Value Problem (IVP) Ordinary Differential Equations (ODEs). After discussing introductory theory we will work out some examples to show the functionality of the method.

PRACTICAL APPLICATIONS OF CONFORMAL MAPPING

Timothy Ivancic, Ryan Vinson (Physics, undergraduate)
Faculty Mentor: Cartwright (Mathematics)

Fluid flows around rigid objects can be modeled in the complex plane. Joukowski transforms are conformal mappings that allow one to analyze a family of airfoil shapes in a fluid flow. We will discuss the correlation between fluid flows and conformal mapping and then demonstrate these ideas through a simulation of a sail.

ABANDONED: LAW AND LAWYERS LEFT BEHIND

Joshua Simons (Political Science, undergraduate)
Faculty Mentor: Nancy Kassop (Political Science)

This paper takes the position that the Bush administration's anti-terrorism policies were born out of a policy-making process that was the product of a specific ideology subscribed to by a few powerful and talented lawyers. While political ideology is always a motivator for presidents, when the Bush administration crafted its approach to combating terrorism, the interagency process of vetting policy was discarded in favor of a process that was single-minded in both its goals, and its approach. This paper is a first effort to examine the rich sources of information now available to try to explain how the process contributed to the policies, or more specifically, how a system of decision-making, insulated from the expertise of career professionals in the relevant agencies and departments, produced policies that prompted widespread disapproval, that have been largely discredited, and that are still a very live subject of continuing investigation.

CIVIL WAR AND THE SPREAD OF MALARIA

Leah Hirsch-Cotter (International Relations, undergraduate)

Faculty Mentor: Jonathan Schwartz (Political Science)

Does civil war contribute to the spread of Malaria, and if so, how? Past literature confirms a correlation between armed conflict within a country and Malaria incidence. As there has been a marked increase in the number of civil wars and incidences of Malaria in less developed countries, there is a need to dedicate more attention to understanding the nature of this correlation. I explore this relationship through a study of Nepal, a country that has recently ended a decade long civil war. I evaluate the effects of the civil war on health infrastructure, population displacement, and the diversion of human and material resources away from the health sector to military activities. Most studies have focused on Malaria in war-torn African countries. In this study I both incorporate a new geographical region- South Asia, and focus on the characteristics of civil wars in LDCs that drive the rise of Malaria.

THE WEAKEST NONPROLIFERATION REGIME: BWC

Ivan Pavlenko (Political Science and International Relations, undergraduate)

Faculty Mentor: Jonathan Schwartz (Political Science and International Relations)

Biological weapons are widely viewed as the most dangerous of all weapons of mass destruction. They are relatively simple and cheap to produce, and are easily concealed, transported, and disseminated. This is why controlling their proliferation has been a major issue for the international community. A control mechanism does exist for biological weapons in the form of the 1973 Biological and Toxin Weapons Convention (BWC). However, the treaty has largely failed to stop the development and the use of bio-weapons. It has been violated on a massive scale by several countries. In addition, only 25 of 192 members of the United Nations have incorporated its major provisions into domestic laws. The aim of this project is to explore why the BWC has proven to be a weak international treaty. Drawing on qualitative analytical methods, this research evaluates the weaknesses of the convention (dependent variable) through the prism of four independent variables: indeterminate language of the convention, presence of dual-use materials, absence of strong monitoring and enforcement mechanisms, and lack of trust in the convention on the part of nation-states. The research also applies these variables to two case studies of the treaty's violation by the USSR and Iraq. The goal is to demonstrate how these variables played out in practice. The case studies illustrate that the BWC has not only been the subject of violation by a superpower but also by a less powerful rogue state.

THE EFFECTS OF BELIEF IN DETERMINISM

Viola Silvan (psychology, undergraduate)

Faculty Mentor: Douglas Maynard (psychology)

Research has shown that belief in determinism decreases prosocial behavior and increases aggression and cheating. The purpose of the current study was to further examine the effects of belief in naturalistic determinism and to investigate how a belief in theistic determinism effects prosocial behavior. Research has how a belief in theistic determinism effects prosocial behavior. Research has shown that religiousness and subjective spirituality are associated with prosocial behavior and that priming God concepts increases prosocial behavior. It was hypothesized that, as compared to a control group, belief in determinism would decrease prosocial behavior; belief in divine omnipotence would increase prosocial behavior. The sample consisted of 239 SUNY New Paltz students. Participants completed an on-line survey and were assigned to one of the four following conditions: determinism, free will, divine omnipotence, and control. Survey completion included a manipulation rephrasing task, a prosocial behavior scale, a free will and determinism scale, and an intrinsic spirituality scale. The findings did not support the hypotheses. Additional analyses revealed that (a) intrinsic spirituality was positively correlated with prosocial behavior, (b) among Christian participants, intrinsic spirituality did moderate the effect of the divine omnipotence condition, and (c) intrinsic spirituality moderated the effect of the free will condition upon prosocial behavior.

CONFIRMING THE METHODOLOGY OF OUR PRIMARY STUDY

Adam Villela, Joanna Rousseau (Psychology, undergraduate)

Faculty Mentor: Douglas Maynard (Psychology)

The purpose of this pilot study is to ensure that the methodology behind a study designed to examine the effect of applicant nonverbal behavior upon interviewer perceptions and decisions, is appropriate. We tested whether the confederate's non-verbal behavior (handshake and eye contact) influenced their verbal responses. Participants listened to audio clips of various conditions from the main study and rated the applicant on several dimensions. To ensure adequate statistical power, we recruited 30 participants from the SUNY New Paltz undergraduate student population. The participants consist of male and female students above the age of 18, who are currently enrolled in a psychology class and/or are a student in one of the Psychology programs. The results of this study indicate that the confederate's non-verbal behavior does not significantly affect their verbal responses. These results confirm the methodology of the main study and suggest that there is no recognizable influence of the confederate's non-verbal behavior on their verbal behavior. The consistency of the confederate's verbal behavior over the positive and negative non-verbal behavior conditions will procure more accurate and valid results.

NON-VERBAL BEHAVIOR IN THE EMPLOYMENT INTERVIEW

Anna Lange, Stacey Smiel, Jeff Cummins (Psychology, undergraduate)
Faculty Mentor: Douglas C. Maynard (Psychology)

The purpose of the research is to determine the effect, if any, that non-verbal behavior (NVB-handshake, eye contact) on the part of a job applicant during an interview has upon the behavior and judgments of the interviewer. We are also investigating whether the interviewer's ability to interpret NVB might influence this relationship. Past research found that the firmness of a handshake and consistency of eye contact are both positively correlated with interviewer ratings and perceived hirability. This study investigates the effect of initial impressions and the interviewer's sensitivity to NVB, in which participants interviewed a confederate for a general hotel manager position after being greeted with either a strong or weak NVB. Depending on the condition (weak vs. strong), applicants would make less eye contact or change their posture accordingly, while keeping their answers and intonations the same to control for speech. Participants evaluated confederate suitability based on perceived ability and personality traits and were themselves evaluated on sensitivity to NVB. We hypothesized that strong NVB would lead to more positive interviewer ratings of the interviewee, as well as easier questions asked and a longer duration of the interview. We also evaluated the results based on the participant's sensitivity to NVB. Interviewer ratings of applicant openness to experience were significantly greater in the strong condition than the weak.

WHY WOMEN ASK FOR DIRECTIONS

Kate Remauro, Regina Musicaro (Psychology, undergraduate)
Faculty Mentor: Alison Nash (Psychology)

While several studies have demonstrated the influence of stereotype threat on women's math performance (e.g. Spencer et al., 1999), none have examined the influence of stereotype threat on spatial navigation. As in math performance, might women's navigational skills be affected by the salience of stereotypic beliefs? To answer this question, we conducted two related studies: 1) examining whether undergraduates have the stereotypic belief that males are better than females in navigational skills, and 2) examining stereotype threat by comparing women's navigational skills with male vs. female partners. In both studies, pairs of students were asked to find their way out of an unfamiliar, confusing maze-like building. The experimenter led each pair deep inside. One member of each pair served as navigator, whose job was to recall the route, and then retrace the way out. The other member recorded the directions recalled by the navigator, taking a passive role in way-finding. We found that our sample of undergraduates hold the stereotypic belief that men are better than women at way-finding. Although most women successfully found their way out, twice as many women in coed pairs than female-female pairs became totally lost. Thus, it appears that when women are in situations that make navigational stereotypes less salient, they are better at finding their way.

HOW HUMOR STYLES AFFECT MATE ATTRACTION

Rachael Carmen (Psychology, undergraduate)

Faculty Mentor: Corwin Senko (Psychology)

Studies often show that women (and men) list a sense of humor as highly desirable in a mate. Yet there are many styles of humor, each serving different purposes. Two of the more common styles for men are 'self-deprecating' humor and 'other-deprecating' humor. The former is used to reduce conflict and convey warmth and humility, while the latter is used to establish dominance and convey strength. Which is more desirable in a mate? Though common sense tells us the self-deprecating one is, evolutionary theories suggest a more complex answer: In accord with the 'good dad' hypothesis, women should prefer a self-deprecating man for a long-term relationship because that style of humor conveys greater warmth-trustworthiness. However, in accord with the 'good genes' hypothesis, they become increasingly attracted to an other-deprecating man for a short-term relationship because that style of humor conveys greater masculinity and, presumably, genetic quality. Our experiment tests these hypotheses. We also test the moderating role of the woman's menstrual cycle. Recent studies show that the preference for masculine qualities and attractiveness in a short-term partner is amplified among women at the most fertile phase of their cycle. We expect the same pattern in this study. Finally, for the sake of comparison, we also examine men's attraction to women who use self-deprecating or other-deprecating humor.

BUILD-A-PROFESSOR

Anastasyia Yakhkind (Psychology, undergraduate)

Faculty Mentor: Cowin Senko (psychology)

Past research shows little consensus among students about what defines effective teaching. A teacher quality that one student considers an absolute necessity may be merely a 'luxury item' to another student. Our study examines whether students judgments about effective teaching trace to the achievement goals that they pursue in their coursework. In particular, there are two broad goals that many students pursue in the classroom: performance goals and mastery goals. Performance-oriented students strive foremost to demonstrate their ability by outperforming peers; mastery-oriented students instead strive foremost to develop their ability and their personal interest in the course material. Guided by the assumption that all students favor professors who facilitate their goal attainment, we hypothesize that mastery-oriented students deem interest-building qualities (e.g., enthusiasm, intellectual challenge) a necessity in their professors and other qualities (e.g., clarity, warm personality) merely luxury items. By contrast, we hypothesize that, whereas performance-oriented students deem clarity about the material and teacher's expectations a necessity and other qualities (e.g., enthusiasm, warm personality) merely luxury items. We tested this hypothesis by having students judge the relative importance of nine commonly valued teacher attributes (e.g., topic expertise, reasonable workload). Our findings generally support the hypothesis.

INSTRUCTIONAL IMPORTANCE STUDY

Sean Wilson (Psychology, undergraduate)
Faculty Mentor: Corwin Senko (Psychology)

Achievement goal theory compares two goals pursued by students: mastery goals, which focus on learning and developing ability, and performance goals, which focus on outperforming peers and demonstrating ability. The theory posits that mastery goals produce more benefits, yet the research shows that performance goals promote greater achievement. Our study tested one possible explanation for this surprising effect. Specifically, we hypothesized that performance-oriented students are especially skilled at identifying and studying the material that the teacher deems important and emphasizes on exams, thus explaining their high exam scores. To test this, General and Abnormal Psychology students reported their achievement goals and were given a list of 20 topics from a selected textbook chapter within one day of their midterm. They rated the likely importance of each topic to their teacher, who also provided importance ratings for each topic, thus allowing a measure of agreement between teacher and student about the instructional importance of each topic. We expect performance goals to predict high agreement, which in turn should promote high exam performance.

WHY DON'T MASTERY GOALS PROMOTE STUDENTS' SUCCESS?

Sarah Wolfe (Psychology, undergraduate)
Faculty Mentor: Corwin Senko (Psychology)

Students who pursue performance goals generally strive to demonstrate their ability by outperforming peers. Students who pursue mastery goals instead strive to improve their ability and develop their interests in course material. Surprisingly, performance goals facilitate class achievement much more reliably than do mastery goals. The current study tested one possible explanation that mastery-oriented students study the interesting material fervently but neglect the duller topics tested on exams. Participants' achievement goals were assessed and then they were given a tutorial on a novel topic that comprised several interesting and several boring subtopics. Time spent on each subtopic was covertly recorded. Participants then took a quiz covering the whole tutorial. Our hypothesis is that mastery-oriented participants should allocate their study time disproportionately to the more interesting topics, and therefore perform well on quiz questions concerning those interesting subtopics but not on questions concerning the duller subtopics. By contrast, those performance-oriented participants should allocate their time more evenly between all of the topics, and would therefore perform relatively well on all parts of the quiz.

JUROR PERCEPTIONS OF SEX OFFENDERS

Bobbie Coleman (Psychology, undergraduate)

Faculty Mentor: Melanie Hill (Psychology)

Much of the extant literature on sexual offenders has focused on male sexual offenders and the effects this type of abuse has had on victims. A cultural denial of women's capabilities to commit sexual offenses against children and adolescents appears to exist. In recent years, studies have emerged exposing the widely held belief of professional clinicians and legal professionals that women still encapsulate the traditional, passive role and are incapable of committing violent crimes. In 1989, Mathews et al. conducted an exploratory study of sixteen imprisoned female sexual offenders. During this study, Mathews et al. developed typologies of the female sexual offender: teacher/lover, male-coerced, and predisposed. Since Mathews et al.'s groundbreaking study, researchers have emerged with other typologies. For example, Mayer (1992) added rapist, sexual

harasser, mother molester and homosexual exploiter to the list. The same study also proposed that typologies of female sexual offenders should be placed on a continuum, rather than be viewed categorically. Vandiver and Kercher (2004) conducted a large scale study of 471 female sexual offenders and argued that female sexual offenders are a heterogeneous group; much like male sexual offenders and the typologies should be more detailed. Bunting (2007) conducted an in depth study exploring the gender bias inherent in clinicians' perceptions of sex offenders. Bunting's findings confirmed that clinicians are less inclined

THE ROLE OF NON-ADJACENT LETTERS IN READING

Denise Donatien-Coder (Psychology, undergraduate)

Faculty Mentor: Giordana Grossi (Psychology)

Extant literature on reading models offers differing hypotheses as to how words are processed during the initial stages of reading. First models posited that letter position remains tacitly coded (e.g., SOUL = S1, O2, U3, L4), while current models purport that letter positions are flexible (e.g., S1-2-3, O1-2-3, U2-3-4, L2-3-4) and activate both adjacent and non-adjacent letter combinations. The purpose of this study was to examine these two contrasting models. Twenty-eight participants were asked to identify a target letter in five-letter strings briefly presented on a computer monitor. It was postulated that participants' accuracy would increase when the bigram frequencies of both adjacent and non-adjacent letters were high rather than low, yielding two main effects. As predicted, the results revealed the presence of one main effect for adjacent letter bigram frequency. Furthermore, the bigram frequency of adjacent letters interacted with the bigram frequency of non-adjacent letters: when the bigram frequency of adjacent letters was high, participants' performance was positively impacted by the bigram frequency of non-adjacent letters; when the bigram frequency of adjacent letters was low, participants' performance was negatively impacted by the bigram frequency of non-adjacent letters. These results suggest that non-adjacent letter combinations indeed influence letter recognition and support models of word recognition where letter position is not precisely coded.

STARTING IN THE MIDDLE

Brittany McKeldin (Psychology, undergraduate)

Faculty Mentor: Maryalice Citera, Robin Cohen La Valle (Psychology, Student Development)

This study examined the connections between transfer students' self-reliance and academic standing. Transfer student self-reliance focuses on whether or not a student makes decisions independent of his/her parents. While no past research has looked specifically at self-reliance, research on autonomy, a key component of self-reliance, indicated that it was linked to academic achievement (NICHD, 2008). We hypothesized that transfer students with higher self-reliance would have better academic achievement, measured by GPA and personal perceptions of academic performance. This study also examined the influence of race and gender on the relationship between self-reliance and academic achievement. Garcia, McIlroy, and Barber (2008) found that Hispanic transfer students had lower academic achievement scores than White students. In a study by the NICHD (2008), the level of autonomy support from parents influenced the autonomy of elementary school boys and girls differently. Transfer students completed a survey during their transfer orientation and a follow-up online survey that assessed self-reliance, self-efficacy, academic integration, race/ethnicity, and gender. In addition, first semester GPA was measured from student records. All of the data have been collected and we are currently analyzing the results. By conducting this study, the researchers hope to identify the role of self-reliance in how individuals adapt to transitions and to improve transfer student services. transfer student services.

UNDERPINNINGS OF LIBERAL AND CONSERVATIVE THOUGHT

Ayla Fleming (BIO, PHI, EVOS, undergraduate)

Faculty Mentor: Glenn Geher (Psychology)

While liberal thinking may predispose us for looser adherence to personal ideologies, conservative thinking might enforce a stronger hold on one's own, traditional beliefs (Russell, 1996). I postulate that the liberal/conservative thought continuum exists as a form of strategic pluralism (SP) in which both liberal/conservative thought are harmful or beneficial under specific ecological conditions. Gersick et al. (1990) suggests that conservative thought is linked to group cooperation, consequential habitual thought and decreased willingness to adapt new ideas, e.g. decreased gullibility (Christman et al., 2008) and increased susceptibility to anchoring affects (Jasper et al., 2008). Conversely, Ansborg et al. (2003) suggests that liberal thought is linked to loosely defined thinking patterns and increased willingness for belief updating, e.g. increased gullibility (Christman et al., 2008) and decreased susceptibility to anchoring affects (Jasper et al., 2008). Based on my analysis of the scholarly literature, it seems that there are empirical connections between liberal and creative thought, and conservative and analytic thought. Ansborg et. al (2003) suggests that while creative thinking predisposes us to make connections between seemingly unrelated data and external stimuli, analytic thinking predisposes us to adapt a specific problem-solving framework. Various studies considering the psychological underpinnings of political ideology will be discussed.

IMAGINING VISIBILITY AND THE LESBIAN AVENGERS

Ellice Litwak (Sociology, undergraduate)

Faculty Mentor: Karl Bryant, Judith Halasz (Sociology and Women's Studies, Sociology)

In the spring of 1992, a handful of experienced activists coalesced in New York around the need for a direct action group. Seeking a forum from which to address identifiably lesbian issues and share organizing skills through creative actions, six women founded the Lesbian Avengers, a community-based direct action organization 'focused on issues vital to lesbian visibility and survival.' At the organization's height the Lesbian Avengers had chapters across the United States and globally. In the United States, the Lesbian Avengers performed an array of actions, from public art installations, to annual dyke marches and coordinated campaigns against antigay ballot initiatives. This research focuses on the New York chapter of the Lesbian Avengers to explore how the group organized and mobilized around a politics of visibility from 1992 through 1995, their most active years. Through archival research and a series of semi-structured interviews with former participants, I argue that the Lesbian Avengers imagined and claimed visibility through the use of play and focused attention on lesbian networks and communities.

GLOBALIZATION, FAIR TRADE AND LOCAL FOOD

Christopher Utzig (Social Ecology (Contract Major) & Philosophy Major, undergraduate)

Faculty Mentor: Brian Obach, Salvatore Engel-DiMauro (Sociology, Geography)

Why, given their seeming opposition to the current globalization of the world economy present within both the local food and fair trade movements, don't the two movements ally more readily with one another or form coalitions? I propose that both movements contain ideological, strategic, tactical and structural differences, as well as differences of scale that keep the two movements largely separated. The two movements seek to address the problems associated with the globalization of food in different ways. The movements have been analyzed through primary source data in the form of mission statements, informational materials and other published materials of Fair Trade and Local Food movement organizations. This primary source material has been accentuated with the findings of existing literature in the field. My findings conclude that there are varying degrees of these differences present within the movements as mentioned above. I have also found that the two movements contain a range of market elements that may act to interfere with their proposed aims. It may not be completely accurate to refer the Local Food or Fair Trade as social movements, but rather as market or consumer trends that are highly socially embedded. This is a question that will require further research.

PERFORMANCE AND PRODUCTION

Larissa Goldberg (Theatre Arts, undergraduate)

Faculty Mentor: Yoav Kaddar, Andrea Varga, Eleanor Wolfe (Theatre Arts)

Performance and Production is a synthesis of theatrical artistry. It is a self choreographed and performed dance piece, with a self designed and constructed costume. The project aimed to combine various creative aspects of theatre including choreography, performance, rendering, and costume craftsmanship.

ASSISTANT DIRECTING BLOOD WEDDING

Rachael Brandt (Theatre Arts, undergraduate)

Faculty Mentor: Anita Gonzalez (Theatre Arts)

The purpose of my study was to assist in directing a production of Blood Wedding by Fredrico Garcia Lorca based upon a Langston Hughes translation. This production hopes to captivate an audience through poetic tragedy and passion. To carry out this project I assisted in researching Garcia Lorca, as well as the avant-garde visual artist Salvador Dalí; both of whom played a major part on the surrealist movement of the 1930s. I also researched aspects of surrealism; gothicism; and the combination of two, Gothic Surrealism. To begin creating the world of Blood Wedding, I attended design and concept meetings to help develop the production with help from composers and set, sound, and costume designers. Once we started rehearsing, I assisted in developing and tracking artistic ideas and concepts, recorded meeting notes, coached and communicated with performers and designers, and took notes during the rehearsal process. The outcome of this project was the creation of a dark nightmare-esque vision with enticing imagery of death and lust.

2007 SURE Award Recipients

Heather Slivko-Bathurst, Anthropology, 2010

Evaluation of the Impact of Modern Anthropogenic Lead on the Reconstruction of Prehistoric Mobility Mentor: Kenneth C. Nystrom, Anthropology

Chelsea Hull Chemistry, 2009

Thermodynamics of single stranded oligonucleotide folding Mentor: Pamela St. John, Chemistry

Ellice Litwak, Sociology, 2009

The Science Of Sexual Reorientation: A Textual Analysis Of Reparative Therapy Within The “Ex-Gay” Movement Mentor: Karl Bryant, Sociology

Jordan Sumliner, Chemistry, 2010

Synthesis of Ruthenium Complexes of Chiral -diketiminate Ligands for Asymmetric Transfer Hydrogenation Reactions Mentor: Daniel Freedman, Chemistry

Giovanna Deluca, May 2010

Synthesis and antimicrobial activity of skeletally modified alpha pinene derivatives

Mentor: Preeti Dhar Chemistry

Jannett Dinsmore, Biology, 2009

Glucose tolerance in young and old wild-type and insulin-like peptide compromised *Drosophila melanogaster* Mentor: Aaron Haselton, Biology

Arsalan Aslam, Biology, 2010

Production of a thermostable amylase Mentor: Maureen Morrow, Biology

Evan Pilnick, Geology, 2009

Stratigraphy of the Oatka Creek/Mount Marion Formations in Central and Eastern New York State: implications for hydrocarbon sources and traps within the Middle Devonian of eastern New York Mentor: Alex Bartholomew, Geology

Corbin Neuhauser, Linguistics, 2009

Patterns in Semantic Drift Across Word Classes : A Comparison of Mandarin Chinese and Japanese Morphemes Mentor: Margaret Wade Lewis, Linguistics

Denise Donatien-Coder, Psychology, 2009

The Effect of Non-Adjacent Letter Combinations on Letter Identification

Mentor: Giordana Grossi, Psychology

Ryan Vinson, Physics, 2009

Non-Invasive Measurement of Bioelectric Currents with a Vibrating Probe

Richard Halpern, Physics

Kathryn Hall, Black Studies & Linguistics, 2009

Worldview & Educational Experience: Assessing the Impact of Alternative Worldviews.

Mentor: Karanja Carroll, Black Studies

Tonya Pasternak Chemistry, 2009

Characterizing membrane-bound biosurfactants produced by *Pseudomonas putida* grown in the presence of polycyclic aromatic hydrocarbons Mentor: Megan Ferguson, Chemistry

David Jakim Environmental Geochemical Sciences, 2009

Revealing Biodiversity: Modeling rare plant occurrences in the Hudson River Valley, NY using GIS Mentor: Lawrence A. McGlinn Geography

Spring 2009 AYURE Award Recipients

Denise Townsend, Theatre Arts 2009

Women In Dance: Leaders or Followers?

Mentor: Yoav Kaddar, Theatre Arts Department: Dance and Movement

Adrianna Mesquita, Anthropology 2009

New Horizons of Participatory Democracy in Porto Alegre: A Fall From Grace or Just Getting Real?

Mentor: Benjamin Junge, Anthropology

Anna Lange, Psychobiology / Chemistry 2009

Effects of Interviewee Nonverbal Behavior on Interviewer Perceptions and Decisions

Mentor: Douglas C. Maynard, Psychology

Viola Silvan, Psychology 2009

The Effects of a Belief in Determinism and Divine Omnipotence on Prosocial Behavior

Mentor: Douglas Maynard, Psychology

Rachael Carmen, Psychology/ Evolutionary Studies/ History 2009

Humor Styles and Mate Selection

Mentor: Corwin Senko, Psychology

Sean Wilson, Psychology 2009

Students' achievement goals and study strategies

Mentor: Corwin Senko, Psychology

Shyam Prajapati, Biology 2009

Melanogenesis stimulation in murine B16 melanoma cells by extracts from Psoralea corylifolia and Heracleum maximum seeds Mentor:

Maureen Morrow and Preeti Dhar, Biology and Chemistry

Ingrid Walfish Chemistry 2010

Tyrosinase stimulatory activity of Psoralea corylifolia and Heracleum maximum extracts

Mentor: Preeti Dhar, Maureen Morrow, Chemistry, Biology

Maria Rodolis, Chemistry 2010

Synthesis of monobactams and their corresponding sulfonyl chlorides

Mentor: Preeti Dhar, Chemistry

Christopher A. Cahn, Biology 2009

Cloning, Purification and "Adoption" of Nuclear Receptors from Ciona intestinalis

Mentor: Jeffrey L. Reinking, Biology

Amanda DeCotes, Biology Major / Chemistry Minor 2010

Identifying proteins that interact with Hug1

Mentor: Jennifer Waldo, Biology

Hana Akimoto, Biology major, Anthropology minor 2010

Investigating the effect of X-ray radiation on ancient DNA

Mentor: Jennifer Waldo and Ken Nystrom, Biology and Anthropology

Rachael Brandt, Theatre Arts 2012

Assistant Directing Blood Wedding

Mentor: Anita Gonzalez , Theatre Arts

Fall 2008 AYURE Award Recipients

- Ingrid Walfish** (Chemistry, 2010) and **Alisha Philip** (Chemistry, 2009)
Fractionation of *Psoralea corylifolia* and *Heracleum maximum* ethanolic extracts and Isolation and characterization of the toxic factor(s) Mentor: Preeti Dhar, Chemistry
- Sarah Wolfe** (Psychology, 2009)
How Mastery-Oriented Students Sabotage Their Own Performance: A Laboratory Investigation Mentor: Corwin Senko, Psychology
- Amanda DeCotes** (Biology, 2010)
Identifying proteins that interact with Hsp1 Mentor: Jennifer Waldo, Biology
- Emily Anne Korona** (Anthropology) 2009
Internet Activism: The Implications of Online Social Justice Mobilization at the 2008 World Social Forum Mentor: Benjamin Junge, Anthropology
- Christina J. Hartwell** (Geology, 2009)
Paleontology of the Stony Hollow Member of the Union Springs Formation (Middle Devonian, latest Eifelian) in Eastern New York State Mentor: Alex Bartholomew, Geology
- Evan Pilnick** (Geology, 2009)
Stratigraphy of the Oatka Creek/Mount Marion Formations in Central and Eastern New York State: implications for hydrocarbon sources and traps within the Middle Devonian of eastern New York Mentor: Alex Bartholomew, Geology
- Thomas Schramm** (Geology, 2009)
Stratigraphy of the Middle Devonian Hamilton Group in the Skunnemunk-Green Pont Outlier in Southeastern New York State Mentor: Alex Bartholomew, Geology
- Joshua Simons** (Political Science, 2008)
Left Behind: Law and (Some) Lawyers in the Bush Administration
Mentor: Nancy Kassop Political Science and International Relations
- Brent Miller** (Sociology, 2008)
Assessment of a Web-based Youth Risk Survey Mentor: Eve Waltermaurer Sociology
- Hana Akimoto** (Biology, 2010)
Investigating the effect of X-ray radiation on DNA
Mentor: Jennifer Waldo, Biology, Ken Nystrom, Anthropology
- Rachel Moreau** (Psychology, 2008)
Effects of Interviewee Nonverbal Behavior on Interviewer Perceptions and Decisions
Mentor: Douglas C. Maynard, Psychology
- Sanjana Reddy** (Biology, 2011)
Quantitation of the cytotoxic effect of Ruthenium complexes on cancer cell lines.
Mentor: Maureen Morrow, Biology, Dan Freedman, Chemistry
- Melissa Mandel** (Printmaking, 2009)
Affordable, Storable, (& Sustainable) Papermaking Unit Mentor: Jill Parisi, Art
- Denni Catalano** (Biology, 2008)
Identification of Bacteria Isolated from Pacific Coral Reef Live Rock
Mentor: Jason Valens, Biology

Student Travel Award Recipients

Denise Donatien-Coder, Psychology, Annual APS Convention, San Francisco, CA

Viola Silvan, Psychology, Conference in Religion and Sprituality, Columbia, MD

Jannet Dinsmore, Biology, Entomology Society of America- Eastern Branch Meeting, Harrisburg, PA

Evan Pilnick, Geology, Northeastern Geological Society of America, Portland, ME

Joshua Simons, Political Science, Western Political Science Association Annual Conference, Vancouver, Canada

Denise Townsend, Theater Arts, American College Dance Festival Association Northeast Conference, College Park, PA

Thomas Schram, Geology, Joint Meeting of the Geological Societies of America, Houston, TX

Christina Hartwell, Geology, Joint Meeting of the Geological Societies of America, Houston, TX

David Jakim, Environmental Geochemical Sciences, Association of American Geographers, Middle-States Division Annual Meeting, Millersville, PA

Giovanna Deluca, Chemistry, American Chemical Society National Meeting, Philadelphia, PA

Chelsea Hill, Chemistry, American Chemical Society National Meeting, Philadelphia, PA

Elice Litwak, Sociology, Eastern Sociological Society Conference, Baltimore, MD

Emily Korona, Anthropology, World Social Forum, Belem, Brazil

National Conference on Undergraduate Research, La Crosse, WI; **Giovanna Deluca**, Chemistry, **Sanjana Reddy**, Biology, **Elizabeth Lewis**, History, **Evan Pilnick**, Geology, **Christopher Gahn**, Geology, **Christina Hartwell**, Geology



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