Schedule of Events

(WAR) Warfield Hall, Allen Auditorium (SC1) Science Center Auditorium
(SC2L) Science Center Second Floor Front Lobby (BOG) Bogigian Gallery

9:00 to 9:45 a.m.

SESSION ONE (WAR)

Welcome Address by Professor Larry Shillock
Moderated by Morgan Shadle '14

Brenda Winklbauer '13 (Psychology)
"Incidence of Bullying: Same Gender vs. Mixed Gender"

Samantha Baker '13 (Psychology)
"Reading Comprehension While Multitasking on Facebook"

Nicole Musser '13 (Sociology)
"The Gendered Portrayal of Athletes on Sports Magazine Covers"

SESSION TWO (SC1)

Welcome Address by Dean Mary Hendrickson
Moderated by Meghan Reed '14

Chelsea Krebs '13 (Biology)
"Comparative Analysis of Viability Assays for Evaluation of Post-thaw Equine Spermatozoa"

Chelsey Smentkowski '13 (Biology)
"The Effect of Posilac® on the Concentration of Insulin-like Growth Factor-1 (IGF-1) in Bovine Milk and Serum"

Connie Goodwin '13 (Biochemistry)
"Purification and Comparative Study of L-Amino Acid Oxidase from *Crotalus horridus* (Timber Rattlesnake) Venoms"

Schedule of Events (continued)

10:00 to 10:45 a.m.

SESSION THREE (WAR)

Moderated by Emily Stanton '14

Catherine Green '13 (Fine Arts)
"Boundaries"

Amanda Stup '13 (Fine Arts)
"Carbine and Steel"

Rebecca Metzbower '13 (Fine Arts)
"Metzbower"

SESSION FOUR (SC1)

Moderated by Ashley Perkins '14

Kayla Croft '13 (Biology)
"The Efficacy of Vitamin K Supplementation When Administered With or Without Coagulation Factor IX on the Treatment of Hemophilia B in a Mouse Model"

Ovsanna Movsesyan '13 (Biology)
"Analysis on Concentrations of 17ß-Estradiol in African Clawed Frogs (*Xenopus laevis*) Treated with Chloroform and Iodoacetic Acid, Common Endocrine Disrupting Compounds, Resulting from Water Disinfection Procedures"

Kelly Sue Antonucci '13 (Biology)
"Effect of Extraction Methods on Antibacterial Properties of Oils Derived from *Salvia officinalis*"

Schedule of Events (continued)

11:00 to 11:45 a.m.

SESSION FIVE (WAR)

Moderated by Derrick Group '14

Kimberly Slaughter '13 (Environmental Studies)
"An Assessment of Invasive and Native Plant Species in the Wetland at the Fulton Farm"

Shauna Pieruccini '13 (Environmental Studies)
"A Comparative Analysis of Riparian Buffers on the Wilson College Campus and Plan for Future Rehabilitation of Problem Areas"

Trisha Williams '13 (Political Science)
"Where Are All the Women? Why More Women Do Not Run for Congressional Office"

SESSION SIX (SC1)

Moderated by Emma Echanis '14

Aneshia Knepper '13 (Biology)
"Familial Grouping of Female *Odocoileus virginianus* in a Hunted Environment"

Monica Lyons '13 (Biology)
"Metal Absorption in *Ulothrix zonata* (Chlorophyta, Ulthraciases) from Sediment Contaminated with Acid Mine Drainage"

Rachael Kinley '13 (Biology)
"Analyzing the Effectiveness of Neodymium as a Shark Deterrent in the Pelagic Longline Fishing Industry to Reduce the Bycatch of Pelagic Shark Species"

11:45 a.m. to 1:00 p.m.

LUNCH RECESS

Schedule of Events (continued)

1:00 to 2:30 p.m.

POSTER SESSION
Science Center, Second Floor Front Lobby

1 **Janelle Wills '14 (Biology)**
"Quantification of Secoisolariciresinol in Bovine Milk from Cattle Fed Diets Supplemented with *Salvia hispanica* and *Linum usitatissimum*"

2 **Cortney Roper '14 (Biology)**
"Chemotactic Factors Involved in the Homing of Canine Mesenchymal Stem Cells to Damaged Sites in Bone"

3 **Meghan Reed '14 (Biology)**
"The Relationship Between Area of Captive Elephant Habitat and Reproductive Status in Both African and Asian Elephants"

4 **Emma Echanis '14 (Biology)**
"The Effects of Sonic Hedgehog and Over-expression of the *DCDC2* Dyslexia Associated Gene on the Growth of Primary Cilia in Cortical Neurons"

5 **Monica Drummond '14 (Chemistry)**
"The Effect of *Matricaria chamomilla*, *Hypericum perforatum*, and *Ocimum sanctum* on Corticosterone Concentration in a Murine Model"

6 **Jyotsna Dhakal '14 (Biology)**
"Determining the Effect of Vitamin D Supplementation on Bacillus Calmette-Guérin Vaccine Induced Resistance to *Myobacterium tuberculosis* Infection in Guinea Pigs"

7 **Ashley Perkins '14 (Chemistry)**
"Alternative Methods of Separation for the Dewatering Process"

8 **Jeaneva Gagne '14 (Biology)**
"Effectiveness of Fecal Bacterial Population Enumeration and Analysis as a Diagnostic Tool for Equine Endocrinopathic and Inflammatory Laminitis"

Schedule of Events (continued)

1:00 to 2:30 p.m. — **STUDENT ART EXHIBIT (BOG)**

3:00 to 4:00 p.m. — **HONORS SESSION (SC1)**

Moderated by Professor Julie Raulli

Dana Hill '13 (Sociology)
"Hear But Not Heard: The Censorship of the Female Voice in Commercial Rap Music"

Laura Hans '13 (Mass Communications)
"The Internet as a Public Sphere: Democracy and Communication"

4:30 to 5:00 p.m. — **DISERT SCHOLAR PRESENTATION (SC1)**

Moderated by Professor Michael G. Cornelius

Casey Beidel '13 (English)
"An Exploration of New-Wave Fabulism"

5:00 to 5:45 p.m. — **RECEPTION**
Science Center, First Floor Front Lobby

6:00 p.m. — **ACADEMIC AWARDS CEREMONY**
Science Center Auditorium

ABOUT THE DISERT SCHOLAR

Last spring Casey Beidel ‘13 was named the Disert Scholar, an honor reserved for the student with the best honors thesis proposal. Beidel discovered his hidden talent for creative writing while enrolled at Wilson. He settled on English as his major and mapped out a course for his future.

Beidel says he couldn’t have done it without the nurturing and supportive environment at Wilson, where he has embraced every challenge and come to appreciate a liberal arts education.

Beidel credits English professor Larry Shillock for awakening his appreciation of literature. It was Shillock’s interpretation of John Cheever’s short story, “The Swimmer,” that triggered Beidel’s imagination. “That story in particular became much different when I re-read it,” he said. “I realized there was something deeper to it. … You start looking at things in a different way and your brain starts thinking differently.”

Beidel’s adviser, Dr. Michael Cornelius, has become a role model, helping him craft a plan for his future — continue on to graduate school, become a college instructor, while writing his own brand of fiction, a newly born genre called New Wave Fabulism.

ABOUT THE DISERT HONORS SCHOLARSHIP

The Margaret Criswell Disert Honors Scholarship is awarded at the Academic Awards Ceremony, held each spring, to the student whose proposal for senior advanced study and research is most worthy of support. This prestigious scholarship is made available through the generosity of Margaret Criswell Disert, ‘20, and is open for competition campus-wide.

CASEY BEIDEL

Class of 2013

English

Advisors: Michael G. Cornelius, Larry Shillock, and Sharon Erby

DISERT SCHOLAR

An Exploration of New-Wave Fabulism

In this study focusing on short stories, the fairly new literary genre of New-Wave Fabulism is explored. Using elements from genre fiction (Science Fiction, Horror, Fantasy especially) and elements of higher literary fiction, this genre is a modern Frankenstein's monster. It takes elements of the realistic and mixes them with elements of the fantastic to create a world that is just slightly off. Like Frankenstein or Dr. Jekyll and Mr. Hyde, these bizarre alterations to conventional reality often allude to a greater theme, or even enter a conversation about essential human issues such as fear, desire, and faith. The word 'fabulism' is derivative of the word 'fable,' and the genre's connection to urban legends, bedtime stories, and even classic fairy tales is evident. Presented is a collection of short stories written in the genre of New-Wave Fabulism. The stories vary in terms of theme and inspiration, and the tales feature devils and angels, nightmares and dreams, the real and the otherworldly, and they showcase what it means to be human, even in a world that has slipped out of order.

TRISHA WILLIAMS

Class of 2013

Political Science

Advisor: Jill A. Hummer

Where Are All the Women? Why More Women Do Not Run for Congressional Office

In the 113th Congress there are a historic number of women holding seats. With eighteen percent of the congressional seats being held by women, this is a step towards equal representation. However, it remains disproportionate to women's representation within the United States population. Historically, women have faced strong gender biases when running against men. Today, women who run against men are just as likely to win. If women are just as likely to be elected to office as men, then why are the numbers of those holding congressional seats still so disproportionate? The answer is that the number of women running for office is still drastically low. What keeps women from pursuing congressional seats? Through a collection of surveys and data the answer to why more women don't run for office falls into these four reasons: women have less political ambition; women have different career choices and professional backgrounds; women's roles as wives and mothers changes the decision-making process for women; and the discrimination from political parties and media discourages those who may consider running for office. With these four major obstacles facing women who even consider running, there is little question as to why they decide to not pursue the campaign. Without certain societal changes and confidence building in young women, there will continue to be a disproportionate number of women who hold congressional seats, and the women of United States will lack full representation.

LAURA HANS

Class of 2013

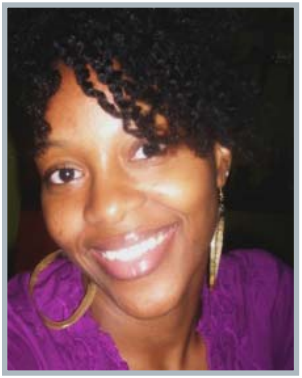
Mass Communications

Advisors: Aimee-Marie Dorsten, Larry Shillock, and Jill A. Hummer

HONORS in the Major

The Internet as a Public Sphere: Democracy and Communication

This paper explains Jürgen Habermas's concept of the public sphere and applies his theoretical model to the Internet, in the process defining the threats to democracy posed by modern mass media's influence and U.S. media-related law. Network neutrality enables a check and balance on Internet Service Providers' (ISPs) commercial power. Without network neutrality, ISPs undermine Americans' First Amendment rights by reducing a diversity of viewpoints and blocking the free flow of information. This paper uses the 2012 U.S. presidential election to show how an idealized public sphere momentarily existed. For awhile, the Internet provided a platform for citizen participation in rational-critical debate; however, the Debordian spectacle relationship between citizens and the media shows how mass media's commercial interests were often not in the public's best interest.



DANA HILL

Class of 2013

Sociology

Advisor: Julie Raulli

HONORS in the Major

Hear But Not Heard: The Censorship of the Female Voice in Commercial Rap Music

Previous research on rap music has identified it as a male-dominated industry. How has rapper Nicki Minaj gained entry into the male-dominated domain of commercial rap while other female rappers, who are accessible digitally, are barely recognized? This research explores how Nicki Minaj negotiates her performance and presentation of self to achieve commercial success in the predominately male rap industry. Through content analysis of album covers and song lyrics, my research shows Minaj was constructed as an ideal type of the commercialized female rapper. Album covers and song lyrics of less commercially successful female rappers Jean Grae, Diamond, and Nitty Scott, MC were then compared to those of Minaj. While similar themes emerged from album covers and song lyric comparisons—themes such as braggadocio, violence references, drugs, and alcohol—findings suggest that commercially successful female rappers are less likely than their underground female counterparts to explore topics that present the artist as vulnerable. Moreover, these findings suggest that feminine rappers must distance themselves from the attributes that are gendered female in order to achieve commercial success. Further findings also reveal that the commercially successful female rapper is more likely than her counterparts to incorporate braggadocio in regards to material wealth, an approach which raises issues of class and economic status.

NICOLE MUSSER

Class of 2013

Sociology

Advisor: Julie Raulli

The Gendered Portrayal of Athletes on Sports Magazine Covers

U.S. female athletes are still undervalued and less visible than their male counterparts, even though they have succeeded dramatically in sport since the passage of Title IX in 1972. Previous studies have demonstrated the important role that media play in our perception of women and men, that media "do not simply create images of women or girls, men or boys, they construct differences between females and males" (Duncan and Margaret, 1990). Oddsson, Kjartan and Birgir (2006) also argue that media play a central role in socialization and consequently in the devaluation of women. This study explores how gender schemas and media contribute to or challenge the devaluation of U.S. female athletes. I employ content analysis to examine magazine cover images and text from two of the nation's leading sports publications: *Sports Illustrated* and *ESPN* magazine. *Sports Illustrated* magazine covers from the years 1976 and 2012, and *ESPN* magazine covers from 2012, were coded and analyzed to explore historical changes in sports media portrayals of female and male athletes. My findings reveal greater invisibility and a more gendered portrayal of U.S. female athletes in 2012 than in 1976.

BRENDA WINKLBAUER

Class of 2013

Psychology

Advisor: Carl Larson

Incidence of Bullying: Same Gender vs. Mixed Gender

Gender differences and incidence of bullying were examined by surveying college age students with no regard to race or age. A Retrospective Bullying Questionnaire and Adolescent Peer Relations survey were distributed to volunteers. The questionnaire identified their experiences with three types of bullying: verbal, physical, and indirect bullying while recalling primary and secondary school age experiences. The peer relations survey identified their participation as the bully or victim. Research has shown boys have reported bullying and being bullied by other boys more than girls report bullying or being bullied by girls or boys. Gender differences are expected when reporting the identity of the bully, boys, girls or when both were involved. It is expected that this study will confirm these findings with these gender differences being reported.

SAMANTHA BAKER

Class of 2013

Psychology

Advisor: Carl Larson

Reading Comprehension While Multitasking on Facebook

This study examines the effects of multitasking on college students' reading comprehension. Participants were divided into three groups, and completed the same reading and a corresponding comprehension test in each group. The first group had no interaction via Facebook (FB) with the experimenter while completing the reading comprehension assignment; the second group had interaction via FB with the experimenter before beginning the reading comprehension assignment; and the third group had interaction via FB with the experimenter during the reading comprehension assignment. The anticipated results for this study are based on Bowman, Levine, Bradley and Gerdon's (2009) study examining instant messaging and multitasking. I expect that the group who had FB interactions during the reading will have significantly lower reading comprehension scores compared to the no interaction and FB interaction before groups; while FB interactions before the reading group will not be significantly different from the no FB interaction group. In general, these results would suggest that multitasking while completing a comprehension assignment will reduce the performance on that assignment.

SHAUNA PIERUCCINI

Class of 2013

Environmental Studies

Advisor: Edward Wells

A Comparative Analysis of Riparian Buffers on the Wilson College Campus and Plan for Future Rehabilitation of Problem Areas

This paper will evaluate the status and health of riparian buffers on the Wilson College campus. After establishing what a healthy riparian buffer is and what it means to the ecosystem affected, the paper will assess the ecological health of buffers both along the Fulton Farm wetland and downstream along mowed green adjacent to the Conococheague Creek. The paper ends with a proposal for techniques that will enhance stream health.

KIMBERLY SLAUGHTER

Class of 2013

Environmental Studies

Advisor: Edward Wells

An Assessment of Invasive and Native Plant Species in the Wetland at the Fulton Farm

This paper researches and determines the percentage of invasive plant species compared to native plant species in and around the wetland at the Fulton Farm. It identifies techniques to eradicate the invasive species. It also identifies and recommends native plant species that are suitable for wetland vegetation to increase the biodiversity and maintain a healthy wetland.

RACHAEL KINLEY

Class of 2013

Biology

Advisors: Laura F. Altfeld and Edward Wells

Analyzing the Effectiveness of Neodymium as a Shark Deterrent in the Pelagic Longline Fishing Industry to Reduce the Bycatch of Pelagic Shark Species

Shark populations are rapidly declining such that finding ways to reduce shark bycatch in the pelagic longline fishing industry (PLL) has become a priority. Electropositive metals have been shown to deter sharks from fishing gear because of the interaction between the electropositive cations released by these metals when they are placed in seawater and the electronegative skin of a shark. The highly sensitive electroreceptive ampullae of Lorenzini is an organ that is only possessed by sharks, rays, and skates that is overstimulated by the measurable voltage created during this reaction. In this experiment, the voltage created when neodymium is placed in seawater was measured in a simulated lab setting. Voltages were measured for 48 hours in 1 centimeter increments from the source. In addition, the interaction between neodymium and wild shark species was tested in the field during fishing trials using three line types: a line containing neodymium, a sham control, and a true control. In the lab, voltage decreased over time and distance. The maximum voltage produced by the reaction was 0.4 V DC. The results of the field trials are inconclusive because no sharks were captured, although a variety of other fish species were caught on all line types suggesting that neodymium has no deterring effect on PLL fishing target species.

ANESHIA KNEPPER

Class of 2013

Biology

Advisors: Laura F. Altfeld, Deborah S. Austin, and Brad E. Engle

Familial Grouping of Female *Odocoileus virginianus* in a Hunted Environment

This study seeks to determine the ability of female *Odocoileus virginianus* to form familial groups with the pressures of hunting. Three herds were investigated: a hunted group, a group on a game preserve, and a captive deer herd. Familial groupings were evaluated using mitochondrial DNA (mtDNA), and sex was determined using the sex determining SRY gene. Feces were collected and DNA was extracted from the feces. The extracted DNA was then magnified using polymerase chain reaction (PCR) with two different sets of primers to cut both the SRY and mtDNA. The mtDNA was then exposed to restriction enzymes in order to further cut the DNA into smaller segments, stained with ethidium bromide, then electrophoresed in gels and imaged. Presence of a band in SRY gels indicated a male sample. Similar banding in mtDNA indicated familial grouping. Both males and females were present among the collected samples in all herds. Similar patterns were observed in the mtDNA, which indicated that familial grouping was occurring in the hunted herd.

KELLY S. ANTONUCCI

Class of 2013

Biology

Advisors: Brad E. Engle and Catherine T. Santai

Effect of Extraction Methods on Antibacterial Properties of Oils Derived from *Salvia officinalis*

This study sought to determine if the antibacterial effectiveness of an oil extracted from a plant depends upon the method of extraction. Three methods of removing oil from a plant were investigated. Solvent extraction utilizes low temperatures (room temperature), exposes plant leaves to organic solvent, and introduces the possibility of residual organic solvent contamination of the resultant oil. Steam distillation involves elevated temperatures (100oC) and no exposure to organic solvent. Microwave-assisted pyrolysis (MAP) involves exposure of plant leaves to high temperatures (400-500oC) in the absence of oxygen to vaporize the lipid components and ultimately create a bio-oil. Oil was extracted from *Salvia officinalis* (common sage) using the three different methodologies and tested for antibacterial effectiveness against two different types of bacteria, *Escherichia coli* and *Staphylococcus aureus*, using a Kirby-Bauer assay. The antibacterial effectiveness of the prepared Sage oils, a commercially produced steam-distilled sage oil, and antibiotic penicillin were compared. For *Salvia officinalis*, the method of extraction did affect the antibacterial properties of the oil. The observed order of *Salvia officinalis* oil effectiveness against *E. coli* was solvent extract (MAP) steam distilled.

KAYLA CROFT

Class of 2013

Biology

Advisors: Brad E. Engle and Catherine T. Santai

The Efficacy of Vitamin K Supplementation When Administered With or Without Coagulation Factor IX on the Treatment of Hemophilia B in a Mouse Model

Hemophilia B is a bleeding disorder that varies in severity in which the blood does not clot normally and is missing or lacking the clotting factor IX (FIX). Vitamin K plays an important role in the blood clotting process because it is involved in the biosynthesis of a number of blood coagulation factors such as FIX. The purpose of this research was to determine whether vitamin K supplementation has any therapeutic value when administered with or without coagulation factor IX (FIX) in Hemophilia B mice. There were five groups with five mice per group: C57BL/6J mice (Group 1) and Hemophilia B mice (Groups 2, 3, 4, & 5). The treatment of coagulation FIX and/or vitamin K was given over the course of six weeks. At the end of each week, blood samples were collected from the submandibular vein and the treatment was administered via tail vein injection. Blood samples were then tested for the clotting time by using the Prothrombin Time Test (PTT) and the Activated Partial Thromboplastin Time test (aPTT).

CHELSEA KREBS

Class of 2013

Biology

Advisors: M. Dana Harriger, Deborah S. Austin, and Julie Skaife

Comparative Analysis of Viability Assays for Evaluation of Post-thaw Equine Spermatozoa

The US equine industry has a $102 billion annual economic impact. Breeding for and maintaining characteristics of breeds and familial lines have spurred research in viability and assessment assays to complement research in cryopreservation. Cryopreservation maintains genetic breeding lines of renowned stallions through long term storage as well as reproductive potential of these lines through artificial insemination. A key predictor of insemination success is post-thaw spermatozoa viability. This research compared three viability techniques on post-thaw equine spermatozoa from six stallions. Two assays, Trypan Blue and the NucleoCounter, assess viability based on dye exclusion, which is indicative of cell membrane integrity. The third assay, MTT reduction, assesses mitochondrial activity, indicative of viability. The results suggest that the dye exclusion assays are comparable while the values from the MTT assay were consistently higher for viability in comparison. These results suggest that although an efficient method to assess viability, the MTT assay may provide misleading values since the results indicate metabolically viable cells regardless of any cellular damage. With regard to dye exclusion, Trypan Blue is a cost effective, reproducible assay that provides consistently reliable values for determination of equine spermatozoa viability.

MONICA LYONS

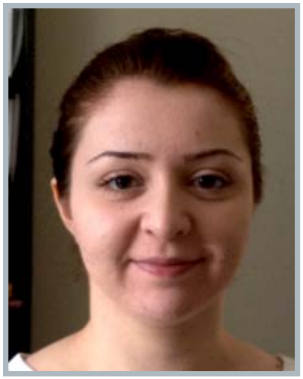
Class of 2013

Biology

Advisors: Brad E. Engle and Deborah S. Austin

Metal Absorption in *Ulothrix zonata* (Chlorophyta, Ulthraciases) from Sediment Contaminated with Acid Mine Drainage

Acid mine drainage is an environmental quality issue for many states, including Pennsylvania. There are several ways to remove the acid mine drainage from the streams; however, these methods can be quite expensive. Research indicates that adding algae to streams can aid in the remediation of the contaminated water and sediment. Studies have determined the amount of iron(III), zinc(II), aluminum(III), and manganese(II) ions algae can absorb from water, but not the quantity of these metal ions absorbed from sediment. *Ulothrix zonata*, an acid tolerant algae, was used to determine the amount of iron(III) ions that can be absorbed from sediment contaminated with acid mine drainage over a period of four weeks. Visible spectrophotometry was used for quantification. *Ulothrix* reduced the concentration of iron(III) ions in the sediment.



OVSANNA MOVSESYAN

Class of 2013

Biology

Advisors: M. Dana Harriger, Laura F. Altfeld, and Catherine T. Santai

Analysis on Concentrations of 17ß-Estradiol in African Clawed Frogs (*Xenopus laevis*) Treated with Chloroform and Iodoacetic Acid, Common Endocrine Disrupting Compounds, Resulting from Water Disinfection Procedures

Water chlorination maintains water quality during distribution, yet it produces disinfection by-products (DBPs), specifically iodoacetic acid and chloroform, characterized as endocrine disrupting compounds (EDCs). Researches show that EDCs have effects on androgen levels, particularly 17ß-Estradiol which is the focus of the research. Female adult African Clawed frogs were exposed to 8 µg/L iodoacetic acid, 0.21 µg/L chloroform and a combination of both (8.21 µg/L) for four weeks. Blood samples were collected weekly via cardiac puncture; plasma was analyzed for 17ß-Estradiol using RP-HPLC. Results are expected to show low concentrations of 17ß-Estradiol, based on the fact that chloroform and iodoform may act as EDCs by targeting the transcription factor of steroid nuclear receptors, activating the estrogen receptor and mimicking natural receptor ligands. Further findings in this area will extend our knowledge of water disinfection and its possible link to hormonal activity that can lead to problems with reproduction and development of the organism.

CHELSEY SMENTKOWSKI

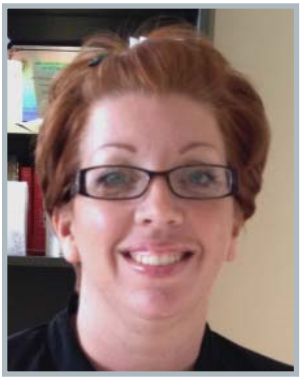
Class of 2013

Biology

Advisors: M. Dana Harriger, Deborah S. Austin, and Gaurav Deshmukh

The Effect of Posilac® on the Concentration of Insulin-like Growth Factor-1 (IGF-1) in Bovine Milk and Serum

Posilac®, also known as Recombinant Bovine Growth Hormone (rBGH) or Recombinant Bovine Somatotropin (rBST), is routinely used to increase milk yield in dairy cattle. Over 1/3 of American dairy cows are currently injected with Posilac® annually. Milk yield from Posilac® treated cattle increases by 10-15%, sometimes reaching as high as 40%. Studies have shown a relation between the Posilac® injection and an increase in concentration of Insulin-like Growth Factor-1 (IGF-1). In addition, increased levels of unbound IGF-1 have been determined as a risk factor for breast, colon, and gastrointestinal cancer. The objective of this research is to determine whether Posilac® has an effect on the concentration of IGF-1 in bovine milk and serum. Milk and serum samples were drawn from 12 cattle (organic, commercial, and commercially raised, injected cattle). Sample IGF-1 quantification was determined by electrochemiluminescent immunoassay (ECL), using a Sector Imager 2400.



CONNIE GOODWIN

Class of 2013

Biochemistry

Advisors: M. Dana Harriger, Brad Stiles, and Catherine T. Santai

Purification and Comparative Study of L-Amino Acid Oxidase from *Crotalus horridus* (Timber Rattlesnake) Venoms

Recent evidence suggests that L-Amino Acid Oxidase (LAO) is a key enzyme responsible for the antimicrobial properties of some biological fluids, where the enzyme catalyzes the deamination of L-Amino acids producing a hydrogen peroxide byproduct which is toxic to most biological cells. LAO has been found in nearly all snake venoms and the concentration of LAO varies greatly between species and additionally within regional variations of the same species. There has been a concerted effort to define the structure and function of LAO derived from snake venoms with the goal of human disease prevention and treatment. There have been successful purifications of LAO to homogenity from *Bothrops insularis*, *Pseudechis australis*, and *Bungarus caeruleus*. This research focused on the purification and quantification of LAO derived from captive and wild populations of *Crotalus horridus* (Timber Rattlesnake) that were captured in the same region of the Appalachian Mountains. The concentration of LAO enzyme was appreciably higher in the wild venom samples and indicates that there is a significant difference in overall venom composition between captive and wild populations of the same region.

CATHERINE GREEN
Class of 2013
Fine Arts
Advisors: Philip Lindsey and Robert K. Dickson

*Bound*aries

My work transforms unconventional, masculinized materials into highly feminine works of wearable art. Each piece is carefully designed, sewn, and structured in an effort to depict the juxtaposition of the predominantly male institution on the framework of the female body. The end effect is an over the top, high fashion silhouette that is aesthetically pleasing and mystifying. I utilize other fine art forms such as drawing, painting, photography, graphic design, etc., to both plan and present my designs for a progressive view of the overall artistic process.

*from the exhibit "**Bound**aries"*

REBECCA METZBOWER

Class of 2013

Fine Arts

Advisors: Philip Lindsey and Robert K. Dickson

Metzbower

My artwork is about connection and disconnection. I bring these ideas to life through abstraction. I develop these pieces by manipulating space and depth, by the use of (or absence of) color, through movement, and by use of formal elements and design principles. I appreciate that my art has no distinct labels or subjects. I believe this allows viewers to establish a meaning and/or opinion on their own. This current exhibition reflects loss, grief, hope, healing and, most importantly, love.

from the exhibit **"Metzbower"**

AMANDA STUP

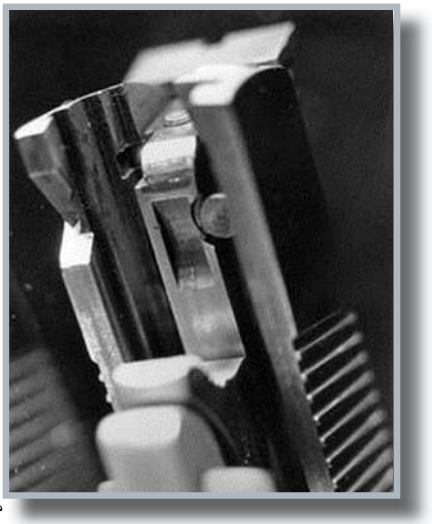
Class of 2013

Fine Arts

Advisors: Philip Lindsey and Robert K. Dickson

Carbine and Steel

Social perception of firearms in the media often comes with negative connotations through stereotype. Is there room for the appreciation of fine craftsmanship, the beauty of machinery, the design of objects, the application of technical developments, and/or our society's connection to the history of arms and armor? Can we find beauty, sensuality, or perhaps femininity in a firearm? This body of work addresses the above questions through the lens of a camera.



from the exhibit **"Carbine and Steel"**

NOTES...

Thank you for your participation in this event!