Creighton University
College of Arts and Sciences

9th Annual Honors Day
Program of Research Presentations

Wednesday, April 24th, 2013
2:00-5:00 PM
Harper Center, 3rd Floor

Program design by Annemarie Weiner
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Welcome from the Dean


Today we recognize the innovation, creativity, and dedication of Creighton’s College of Arts and Sciences Honors students. We celebrate the range of their academic accomplishments. The presentations, posters, and artwork demonstrate the very best of what exceptional undergraduates can produce when provided with the combination of freedom of inquiry, disciplinary focus, and mentorship from faculty, all of which are key features of Creighton University’s Honors Program. What you see displayed here in the Honors students’ projects is a culmination of intellectual curiosity, diligent research, and steadfast commitment to creating new knowledge. I hope you will join me in congratulating the students and their mentors. We are proud of your contributions to Creighton and to your fields. We honor you.

Congratulations, Class of 2013!

Dr. Bridget Keegan, Ph.D.
Professor of English and Interim Dean,
College of Arts and Sciences

Welcome from the Director

Dear Graduating Seniors,

Four years ago, you entered Creighton as freshmen filled with ambition and anxiety. Moved by your lofty goals, and inspired by the values of the Honors Program, you began a challenging course of education and personal development, trusting that completing this course would ready you to fulfill your ambitions and serve the wider community. With growing success, your anxiety gave way to hope, as hope gave way to certainty. Those of us who shared your anxieties and hopes can today share that certainty as we witness the extraordinary fruit of your ambition. Your passion for learning, dedication to the truth, and commitment to promoting just and fruitful ways of thinking are on display for us to see and celebrate. We are rightly proud of you for your impressive achievements.

Congratulations, Class of 2013.

Dr. Jeffrey Hause, Ph.D.
Honors Program Director
## Oral Presentation Schedule

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<th>Time</th>
<th>Room</th>
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<tbody>
<tr>
<td>2:05 p.m.</td>
<td>3027</td>
<td>Mary Kate Gliedt</td>
<td>A Clear Day on Inis Mór: Elucidating the Meaning of Irish Immigrant Culture on Irish America</td>
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<td>2:05 p.m.</td>
<td>3027a</td>
<td>Michael Austerberry</td>
<td>Comparison of Upwind and Downwind Soundings During Convective Events</td>
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<tr>
<td>2:05 p.m.</td>
<td>3029</td>
<td>Michelle Skaff</td>
<td>Financial Education and Health: Creighton's Financial Success Program</td>
</tr>
<tr>
<td>2:05 p.m.</td>
<td>3029a</td>
<td>Michael Farley</td>
<td>Lost Voices of the Reservation: Silent Discrimination and the Oglala Sioux of Pine Ridge</td>
</tr>
<tr>
<td>2:35 p.m.</td>
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<td>Natalie Gorup</td>
<td>‘Catching’: a Collection of Poetry, with an Accompanying Essay, ‘My Philosophy of Poetry.’</td>
</tr>
<tr>
<td>2:35 p.m.</td>
<td>3027a</td>
<td>John Otto</td>
<td>Raman Spectroscopic Determination of Uptake and Reaction Kinetics of Optically Trapped Aerosols</td>
</tr>
<tr>
<td>2:35 p.m.</td>
<td>3029</td>
<td>Erin Triplet</td>
<td>H-NS and H-NS-like Mediation of Gene Transcription in Gram-Negative Bacteria</td>
</tr>
<tr>
<td>2:35 p.m.</td>
<td>3029a</td>
<td>Gloria Larson</td>
<td>Modeling Bioterrorism Risk: A Method for Determining a Country's Vulnerability to a Bioterrorism Attack using Fuzzy Mathematical Techniques</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>3027</td>
<td>Katherine Alexander</td>
<td>The Japanese Swamp and the European Tree</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>3027a</td>
<td>Anne Mirich</td>
<td>Preliminary Investigation into the Mechanism of Alkane Hydroxylation by Water Soluble OxoFe(IV) Porphyrins, Completed at Princeton University Summer 2012</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>3029</td>
<td>Karen Vanderzanden</td>
<td>The Role of Threat Severity in the Processing of Preference-Inconsistent Feedback</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>3029a</td>
<td>Emmett O'Keefe</td>
<td>Men and Women For and With Others: The Omaha De Porres Club and the Coca-Cola Boycott of 1951</td>
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<tr>
<td>3:25 p.m.</td>
<td>3027</td>
<td>Elizabeth MacCarthaigh</td>
<td>Not All That Glitters is Gold, Not All Philosophy Induces Migraines</td>
</tr>
<tr>
<td>3:25 p.m.</td>
<td>3027a</td>
<td>Rachel Meisinger</td>
<td>Examining the Relationship Between Self-Esteem Stability and Academic Performance in Students with ADHD</td>
</tr>
<tr>
<td>3:25 p.m.</td>
<td>3029</td>
<td>Merijke Coenraad</td>
<td>Will Toys Just Be Toys?: The Effects of Familiarity on Children's Play Patterns</td>
</tr>
<tr>
<td>3:25 p.m.</td>
<td>3029a</td>
<td>Corbin Weaver</td>
<td>Refugee Health Needs in Creighton University’s Florence Clinic</td>
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<tr>
<td>3:50 p.m.</td>
<td>3027</td>
<td>Megan Turco</td>
<td>The Argument from Evil</td>
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<tr>
<td>3:50 p.m.</td>
<td>3027a</td>
<td>Elizabeth Scheer</td>
<td>Self-Regulation Capacities and the Extraversion-Introversion Personality Dimension</td>
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<tr>
<td>3:50 p.m.</td>
<td>3029</td>
<td>Samuel Kor</td>
<td>Visualization of JNK Signaling Dynamics in Living Cells</td>
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<tr>
<td>3:50 p.m.</td>
<td>3029a</td>
<td>Seella Nimmo</td>
<td>Den of Shadows: Cultural Attitudes in Indochina and the Vietnam War in Relation to the Emergence of Modern Cambodia and Laos</td>
</tr>
<tr>
<td>4:15 p.m.</td>
<td>3027a</td>
<td>Jordan Kellerstrass</td>
<td>Write Code. [Merge Concepts.] Save Lives</td>
</tr>
<tr>
<td>4:15 p.m.</td>
<td>3029a</td>
<td>Mithra Pirooz</td>
<td>Creciendo Sin Sol: An Autoethnography about My Time Spent Working with Children with Disabilities in the Dominican Republic</td>
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### Poster Presentation Schedule

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<td>Brent Buck</td>
<td>Dicarboxylated Ethynylarynes as Fluorescent Chemsensors for Polyamines</td>
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<td>2:05 p.m.</td>
<td>3023</td>
<td>Erin Borchers</td>
<td>Can State Tax Policies Be Used to Grow Small Businesses?</td>
</tr>
<tr>
<td>2:12 p.m.</td>
<td>3028</td>
<td>Eryn Carpenter</td>
<td>Analyzing the Recovery of the Invasive Black Mangrove after a 2011 Freeze Event in Redfish Bay, Texas</td>
</tr>
<tr>
<td>2:12 p.m.</td>
<td>3023</td>
<td>Eric Fischer</td>
<td>Analyzing the Variability of Cyberattack Involvement: A Social Network Analysis</td>
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<tr>
<td>2:19 p.m.</td>
<td>3028</td>
<td>Jing Chen</td>
<td>In Response to Damage, Activated Microglia Enhance Neuronal Differentiation and Survival</td>
</tr>
<tr>
<td>2:19 p.m.</td>
<td>3023</td>
<td>Annie Gowen</td>
<td>Do IPRs Facilitate Economic Growth in Least-Developed Countries?</td>
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<td>2:26 p.m.</td>
<td>3028</td>
<td>Susan Cook</td>
<td>Pioglitazone Improves Immunosuppressant-Induced Hyperglycemia and Reproductive Dysfunction</td>
</tr>
<tr>
<td>2:26 p.m.</td>
<td>3023</td>
<td>Mary Kate Hutfless</td>
<td>Emotional Labor, Organizational Politics and Meeting Satisfaction</td>
</tr>
<tr>
<td>2:33 p.m.</td>
<td>3028</td>
<td>Daniel Delaney</td>
<td>Kinetic Analysis of Binding Affinity of Potential Antibiotics for the GLMS Ribozyme</td>
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<tr>
<td>2:33 p.m.</td>
<td>3023</td>
<td>Rebecca Lange</td>
<td>The Effects of Environmental Enrichment on Nicotine Rewards in the Rat</td>
</tr>
<tr>
<td>2:40 p.m.</td>
<td>3028</td>
<td>Alexander Ginder</td>
<td>Saponification of Phospholipids</td>
</tr>
<tr>
<td>2:40 p.m.</td>
<td>3023</td>
<td>Joseph Maschman</td>
<td>Income Inequality and Political Efficacy in the United States</td>
</tr>
<tr>
<td>2:47 p.m.</td>
<td>3028</td>
<td>Brittany Handrich</td>
<td>Cerebellar Development in Dicer Conditional Knock-Out Mice</td>
</tr>
<tr>
<td>2:47 p.m.</td>
<td>3023</td>
<td>Jared Ruchensky</td>
<td>The Relationship Between Eating Disorders, Depression, and Intra-sexual Competition</td>
</tr>
<tr>
<td>2:54 p.m.</td>
<td>3028</td>
<td>Ryan Hafner</td>
<td>Caring for the Caregivers: An Ethnographic Study on Pediatric Transplantation</td>
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<td>2:54 p.m.</td>
<td>3023</td>
<td>Kyle Serreyn</td>
<td>Creatine and Immune Function</td>
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<tr>
<td>3:01 p.m.</td>
<td>3028</td>
<td>Brianna Byllesby</td>
<td>The Association Between Victim Offender Relationship and Subsequent Trauma Response and PTSD</td>
</tr>
<tr>
<td>3:01 p.m.</td>
<td>3023</td>
<td>Kayla Nelson</td>
<td>Predictors of URICA Scores and Relapse Rates in Dually-Diagnosed Patients: Looking at Ilicitness of Drug and Reason for Treatment</td>
</tr>
<tr>
<td>3:08 p.m.</td>
<td>3028</td>
<td>Taylor Bauman</td>
<td>Break Away: An Investigation into Studying Smarter Not Harder</td>
</tr>
<tr>
<td>3:08 p.m.</td>
<td>3023</td>
<td>Brittany Zastrow</td>
<td>Depth versus Breadth: The Impact of Differences in Undergraduate Research Experiences on Graduate School Admissions Decisions</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>3028</td>
<td>Nathan Horst</td>
<td>Coarse Grained Molecular Dynamics: Analysis of the Interaction between AB Alzheimer's Protofilaments and a Lipid Bilayer.</td>
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Poster Presentation Schedule

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<tr>
<td>3:57 p.m.</td>
<td>3028</td>
<td>Alan Buttars</td>
<td>An Analysis of an Intensive Supervision Program for Sex Offenders</td>
</tr>
<tr>
<td>4:04 p.m.</td>
<td>3028</td>
<td>Cameron Kieffer</td>
<td>Understanding Ionic Gels by Dielectric Spectroscopy</td>
</tr>
<tr>
<td>4:11 p.m.</td>
<td>3028</td>
<td>Veronica Urbik</td>
<td>Bcl2 Transgene Expression Promotes Increased Expression of Immunoglobulin λ-chain-rearrangement in Mice in an Effort to Rescue Development</td>
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Schedule of Speakers

Welcome and Introduction:
Dr. Lydia Cooper, Assistant Director of the Honors Program

Welcome from the Dean:
Dr. Bridget Keegan, Interim Dean of the College of Arts and Sciences

Congratulations from the Office of the Vice President for Academic Affairs:
Dr. J. Chris Bradberry, Interim Vice President for Academic Affairs

Congratulations from the President:
Father Timothy R. Lannon, S.J.

Closing remarks:
Dr. Jeffrey Hause, Director of the Honors Program
Katherine Alexander  
Major: Theology  
Faculty Sponsor: Dr. Jeffrey Hause  
3:00-3:20 p.m., Harper 3027

“The Japanese Swamp and the European Tree”

As a matter of historical record, the Christian mission in Japan has been mostly unsuccessful. After a brief period of apparent success, Christianity was harshly persecuted and it never recovered even after religious toleration became Japanese law. Shusaku Endo, a twentieth century Japanese Christian author, asks why it is that the two cannot seem to meet. Focusing on The Samurai and Silence, two novels that take us back to last days of Christian success and the beginnings of persecution, we will try to unravel along with Endo how two worlds could have come together yet missed one another.

Michael Austerberry  
Major: Atmospheric Sciences  
Faculty Sponsor: Dr. Joe Zehnder  
2:05-2:25 p.m., Harper 3027a

“Comparison of Upwind and Downwind Soundings During Convective Events”

The CuPIDO field experiment (from 2006) was a study of mountain convection using airborne and ground-based data. The main hypothesis is that precipitating convection can only occur when the air column has been modified by shallow convection that moistens the atmosphere and prevents the cloud from evaporating by entraining dry environmental air. This project will compare vertical profiles of moisture and temperature obtained from mobile soundings in positions upwind and downwind of the areas of convection with data obtained from an instrumented aircraft. A specific case with a clear up and down wind direction will be examined in detail to determine the extent of moistening as the clouds develop.

Taylor Bauman  
Major: Psychology  
Faculty Sponsor: Dr. Isabelle Cherney  
3:08 p.m., Harper 3028

“Break Away: An Investigation Into Studying Smarter Not Harder”

This study uses modern understandings of both the spacing effect and memory interference to test three distinct conditions in an attempt to help students study more efficiently by utilizing study breaks effectively. The study will follow the proportional model of spacing effect experiments presented by Rohrer and Pashler (2007), but will also instruct students to either sit quietly, complete a mental rotational test (MRT), or study alternative materials during the break in between study sessions. Based on present understandings of memory interference, it is hypothesized that doing nothing will provide the largest spacing effect testing improvements; studying alternative materials will provide the smallest improvements; and MRT improvements will fall somewhere in between.

Erin Borchers  
Major: Economics  
Faculty Sponsor: Dr. John Deskins  
2:05 p.m., Harper 3023 North

“Can State Tax Policies Be Used to Grow Small Businesses?”

We study the relationship between small business activity and U.S. state tax policy, examining a broad array of state tax policies
Abstracts

for the 50 U.S. states from 1989 through 2007. In a distinct turn from previous literature, we estimate the relationship between state tax policy and large business activity and contrast these with our primary results. Results provide evidence that state tax policy can significantly influence small business firm, establishment, payroll, and employment growth in certain instances. In contrast, results provide very little evidence that state tax policy significantly influences large business firm, establishment, payroll, or employment growth.

Benjamin Branigan
Major: Psychology
Faculty Sponsor: Dr. Andrew Baruth
3:50 p.m., Harper 3028

“Solar Powered iPhone Charger”

By 2016 1 billion people worldwide will be using smart phones. The average smart phone uses about 2.3 kWh of power annually. In itself, this amount may seem negligible. However, it creates a sizable burden when multiplied by the astronomical amount of smart phone users. Approximately 170 million iPhone 5s will be purchased within the next 12 months. The annual energy consumption of these devices alone is equivalent to the amount of electricity used by 54,000 U.S. households. The purpose of this project is to design and create fully functional solar powered iPhone chargers, thereby promoting the usage of clean energy.

Abstracts

Brent Buck
Major: Chemistry
Faculty Sponsor: Dr. James Fletcher
2:05 p.m., Harper 3028

“Dicarboxylated Ethynylarenes as Fluorescent Chemosensors for Polyamines”

Polyamines are known to be involved in cellular metabolism and to stabilize DNA, and they can be over-expressed in cancerous tissues. Therefore there is a strong demand to be able to detect and distinguish them in solution. Recently our lab discovered a new dicarboxylated ethynylarene chemosensor able to detect Cd(II), Pb(II) and Zn(II) in buffered aqueous solutions as a “turn-on” fluorescence signal. It was discovered that sensor selectivity could be modified by merely changing the identity of the buffering agent used in the assays. Characterization of this buffer dependency indicated that useful buffers possessed a positively charged amine group and at least one coordinating group. We hypothesized that this phenomenon was due to a three-component assembly of the fluorescent probe, amine buffer and metal cation. The aim of this study was to investigate whether this three-component mechanism could be used to selectively detect polyamines using fluorescent probe/metal combinations. A series of biologically relevant polyamines and control amines were screened for “turn-on” responses with varying fluorophore/metal combinations. It was discovered that spermine could be selectively detected over other structurally similar amines using these sensors. Details of the synthesis and high throughput amine binding assays will be presented.
Abstracts

Alan Buttars
Major: Psychology
Faculty Sponsor: Dr. Matthew Huss
3:57 p.m., Harper 3028

“An Analysis of an Intensive Supervision Program for Sex Offenders”

The last several decades have seen increased evidence supporting the practice of intensive supervision to treat sex offenders. The current study examined a population of 952 Iowa sex offenders assigned to either the Intensive Supervision Program for Sex Offenders (ISPSO), a traditional residential treatment center (RTC), or standard probation. Survival analysis over a five-year period found ISPSO offenders to generally recidivate faster following an intervention than either RTC or standard probation offenders when controlling for risk, although recidivism rates were not significantly different for violent, non-violent sexual, and violent sexual offenses. The effectiveness of all programs is discussed.

Brianna Byllesby
Major: Psychology
Faculty Sponsor: Dr. Matthew Huss
3:01 p.m., Harper 3028

“The Association Between Victim Offender Relationship and Subsequent Trauma Response and PTSD”

Previous research has shown that the unique aspects of trauma can influence an individual’s subsequent trauma response, particularly posttraumatic stress disorder (PTSD). The present study examined the association between the victim-offender relationship, subjective trauma characteristics, and emotional dysregulation in the development of later PTSD in women with a history of child sexual and physical abuse. The proposed model accurately predicted PTSD development for each of four methods of measurement, which allowed identification of specific aspects of the experience that were salient in developing psychopathology later in life.

Eryn Carpenter
Major: Biology
Faculty Sponsor: Dr. John Schalles
2:12 p.m., Harper 3028

“Analyzing the Recovery of the Invasive Black Mangrove after a 2011 Freeze Event in Redfish Bay, Texas”

The focus of this project was to analyze the recovery of the halophyte Avicennia germinas (Black Mangrove) after a 2011 freeze event with a north to south intensity gradient in the Redfish Bay area of Aransas, Texas. The Black Mangrove is displacing the native saltwater marsh vegetation in Redfish Bay, a critical habitat for the endangered Whooping Crane. Data was collected by traversing through these groves and taking height measurements and photographs to compare their current condition to their state immediately after the 2011 freeze. The vegetation fraction of all the plots was found and compared to historic data to quantify recovery. Satellite imagery was analyzed and supported the physical data of the damage gradient and recovery patterns.
Abstracts

Jing Chen
Major: Biology
Faculty Sponsor: Dr. Annemarie Shibata
2:19 p.m., Harper 3028

“In Response to Damage Activated Microglia Enhance Neuronal Differentiation and Survival”

Contribution of microglia to neurogenesis under different pathological conditions is unclear. Both pro and anti-neurogenic effects have been reported, reflecting the complexity and heterogeneity of microglial activation and effects. In this study, we have developed an in vitro model system designed to co-culture microglia in transwells suspended above mechanically damaged or undamaged primary neuronal cultures. Immunocytochemistry, Western blot, and RT-PCR analysis of damaged neurons co-cultured with microglia at specific time points indicates developmentally regulated expression of nestin, α-internexin, GFAP, β-tubulin III, and NeuN when compared to damaged neurons that were not co-cultured with microglia. Analysis of co-cultures also shows increased activation of the PI3K/AKT and MAPK signaling pathways suggesting microglial secretion may utilize these pathways to promote neuronal differentiation and survival. Further, we examine neurotrophic microglial induced changes in neuronal epigenetics through the targeting of histone modifications and transcription factors such as REST and co-REST. Our data suggests that microglia may possess modifiable properties to become potential targets for neuroprotective therapies. Research is funded by NIH grant number P20 RR016469 from the INBRE Program of the National Center for Research Resources.

Merijke Coenraad
Major: Elementary Education
Faculty Sponsor: Dr. Isabelle Cherney
3:25-3:45 p.m., Harper 3029

“Will Toys Just Be Toys?: The Effects of Familiarity on Children’s Play Patterns”

The world in which we live is heavily gendered. Both overtly and covertly, gender roles have been assigned to every facet of our society, from colors to jobs. Although it is known that these gender stereotypes exist, there is a limited amount of knowledge concerning their effects on some of society’s most vulnerable: children. This study examined the play patterns of 63 three- to five-year-old children with 40 gender stereotyped, neutral, and ambiguous toys in a gender balanced play lab. Determining the factors that go into children’s play decisions is essential as these choices affect both their intellectual and social development.

Susan Cook
Major: Biology
Faculty Advisor: Dr. Carol Fassbinder-Orth
2:26 p.m., Harper 3028

“Pioglitazone Improves Immunosuppressant-Induced Hyperglycemia and Reproductive Dysfunction”

Previous research has found that immunosuppressant medications have been linked to reproductive and glycemic abnormalities. My research looked at the side effects of immunosuppressant medications when used in conjunction with an anti-hyperglycemic medication called Pioglitazone. The results suggested that Pioglitazone helps combat the reproductive and glycemic abnormalities that immunosuppressant medications alone cause.
Abstracts

Daniel Delaney
Major: Biochemistry
Faculty Sponsor: Dr. Juliane Soukup
2:33 p.m., Harper 3028

“Kinetic Analysis of Binding Affinity of Potential Antibiotics for the GLMS Ribozyme”

The bacterial glmS ribozyme is a mechanistically unique functional RNA among both riboswitches and RNA catalysts. Its self-cleavage activity is the basis of riboswitch regulation of glucosamine-6-phosphate (GlcN6P) production, and catalysis requires GlcN6P as a coenzyme. Kinetic analyses using the natural ligand and ligand analogs have focused on determination of binding affinity for the glmS ribozyme. These compounds are candidate antibiotics that might disrupt normal cell metabolism in a variety of human bacterial pathogens that harbor the glmS ribozyme.

Michael Farley
Major: History
Faculty Sponsor: Fr. Ray Bucko, S.J.
2:05 p.m., Harper 3029a

“Lost Voices of the Reservation: Silent Discrimination and the Oglala Sioux of Pine Ridge”

The Oglala Sioux tribe and the land of the present-day Pine Ridge Indian Reservation hold a history rich in controversy: the Oglala Sioux tout nationally-recognized leaders such Crazy Horse and Red Cloud and the Pine Ridge Reservation is perhaps best known as the location of the Wounded Knee Massacre and later American Indian Movement standoff with the United States government. However, there is more to the history of the Oglala Sioux and Pine Ridge than famous leaders and major events. Notably, the current national treatment of American Indians on reservations has been called America’s “hidden discrimination.” In the move away from popular and “great man” history, I explore the past, present, and future of the Oglala Sioux of Pine Ridge through a social history approach by discussing issues of poverty, discrimination, and health as they relate to the “people on the ground.”

Eric Fischer
Major: Economics, minor Political science
Faculty Sponsor: Dr. Terry Clark
2:12 p.m., Harper 3023 North

“Analyzing the Variability of Cyberattack Involvement: A Social Network Analysis”

This paper seeks to explain the variation in the involvement of states in cyberattacks. I hypothesize that as the global interconnectedness of a state increases so will its involvement in cyberattacks. I create a social network of the global structure then calculate different measures of centrality of the network for each state in the network. The regression models indicate a statistically significant relationship between cyberattack involvement and measures of centrality in the international system.

Alexander Ginder
Major: Biochemistry
Faculty Sponsor: Dr. Eric Haas
2:40 p.m., Harper 3028

“Saponification of Phospholipids”

Phospholipids are broken down into their fatty acid subunits.
Abstracts

Mary Kate Gliedt
Major: Technical Theatre, minor Irish Literature
Faculty Sponsor: Dr. Bob Whipple
2:05-2:25 p.m., Harper 3027

“A Clear Day on Inis Mór: Elucidating the Meaning of Irish Immigrant Culture on Irish America”

More than thirty million Americans claim Irish ancestry - but do they claim Irish culture as well? This presentation, researched both in Ireland and in the United States, aims to answer just that question. Through experiences with family, friends, travel, and work, the concept of Irish-Americanness is explored and interpreted, in an effort to pin down the nature of Irish, Irish America, and to determine if Irish-Americans have a right to claim that Irish heritage.

Natalie Gorup
Majors: English, French
Faculty Sponsor: Dr. Michael Brown
2:35-2:55 p.m., Harper 3027

“Catching’: a Collection of Poetry, with an Accompanying Essay, ‘My Philosophy of Poetry.’”

This two-part project combines poetry and philosophy in order to explore their relation and usefulness to one another in practice. I engages the moments in our lives that “catch” with a collection of poems and then examine the potential these moments have to hold some kind of philosophic truth in an accompanying essay. This essay treats the ancient quarrel between poetry and philosophy using the perspectives of Plato and Aristotle on poetry. By giving my “philosophy of poetry,” I explain how I understand the quarrel and therefore how I understand what I do as an aspiring poet and philosopher.

Annie Gowen
Major: Economics
Faculty Sponsor: Kristie Briggs
2:19 p.m., Harper 3023 North

“Do IPRs Facilitate Economic Growth in Least-Developed Countries?”

This paper analyzes the degree to which the strength of intellectual property rights (IPR) enforcement affects investment, trade and GDP growth in developing countries. We look at 30 of the world’s 47 least-developed countries, examining what (if any) broader relationship exists between IPRs and growth in developing countries. We measure IPRs in terms of nominal legal protection and the degree to which they are enforced. Our analysis consists of OLS and random effects regressions. Through both types of models, we regress each measure of growth on the aforementioned measure of IPRs, in addition to several control variables.

Christopher Guziec
Majors: French and Francophone Studies
Faculty Sponsor: Dr. David Vanderboegh
3:15 p.m., Harper 3023 North

“La Beauté chez Amélie Nothomb: Est-elle être vraiment féministe?”

Le sujet de la beauté est omniprésent dans l’œuvre d’Amélie Nothomb, une romancière belge publiant chaque année depuis 1992. Il est étonnant que sa conception de la beauté n’a pas énormément évolué au fil du temps: ce sont toujours les jeunes femmes puériles, angéliques, et presque anorexiques qui incarnent la beauté. Pourtant, si ce sont des qualités qui font partie de l’idée de la beauté répandue par le patriarcat du monde moderne, comment est-ce
Abstracts

The subject of beauty is ubiquitous in the work of Amélie Nothomb, a Belgian author who has published a novel every year since 1992. It is surprising that her conception of beauty has not evolved much at all over time: it is always the puerile, angelic, and almost anorexic young women who incarnate what is beautiful. However, if these are qualities that are a part of the idea of beauty spread by the patriarchy of our modern world, how is it possible that so many critics and scholars have classified this author as a feminist? In this study, I argue that Nothomb has developed her own kind of feminism and that she can hold her ideas on beauty in good faith.

Ryan Hafner
Major: Psychology
Faculty Sponsor: Dr. Jill Brown
2:54 p.m., Harper 3028

“Caring for the Caregivers: An Ethnographic Study on Pediatric Transplantation”

Due to increasing rates of organ transplantation procedures, understanding a primary caregiver’s health-related quality of life and psychosocial impact is becoming critical for clinical success. Previous quantitative studies have examined this situation from the caregiver’s perspective but there is a void in contextual information. For qualitative purposes, an ethnographic case study was performed with families of pediatric transplant patients. Field notes from semi-structured interviews were analyzed to determine any patterns among caregiver responses. The findings of this study may help medical teams provide better anticipatory support and effective methods of caring for both the caregiver and the patient.

Brittany Handrich
Major: Biology
Faculty Sponsor: Dr. Annemarie Shibata
2:47 p.m., Harper 3028

“Cerebellar Development in Dicer Conditional Knock Out Mice”

I am looking at how the knockout of the RNase type III endonuclease, Dicer, which is required to process functional miRNA and siRNA, impacts neurogenesis and potential neurodegeneration. I am studying the role of small regulatory RNAs in neurogenesis and neurodegeneration through assessing the function and structure of the cerebellum in the absence of dicer via immunohistochemical analyses, looking at the maintenance and regulation of neuronal and glial cells in number and in organization. Later this year, we will begin behavioral tests on the mice to see how the dicer knockout effects their abilities to move around, climb, and lead normal lives.

Brittany Handrich
Major: Biology
Faculty Sponsor: Dr. Annemarie Shibata
2:47 p.m., Harper 3028

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Nathan Horst
Major: Physics
Faculty Sponsor: Dr. Patricia Soto
3:15 p.m., Harper 3028

“Coarse-Grained Molecular Dynamics Analysis of the Interaction between AB Alzheimer’s Protofilaments and a Lipid Bilayer.”

Alzheimer’s disease is a neurological disorder characterized by the presence of aggregate forms of the Ab peptide. The goal of this project is to test the hypothesis that polymorphic Ab protofila-
Abstracts

However, the abstracts should be properly formatted and not cut off. Please provide the full abstracts as they appear in the document.
Abstracts

Summer of Code 2012 project and subsequent research are the first steps in solving this problem for one of the world’s leading open source electronic medical record system platforms: OpenMRS.

Cameron Kieffer
Majors: Chemistry and Economics
Faculty Sponsor: Dr. David Sidebottom
4:04 p.m., Harper 3028

“Understanding Ionic Gels by Dielectric Spectroscopy”

Ionic liquids are known for their stability, low vapor pressure, and conductivity. These properties make ionic liquids ideal for use in a new generation of batteries as green energy becomes more prevalent. However an effective battery must have a solid structure. This investigation focuses on the synthesis of ionic gels formed from a rigid silica-like network created using a non-aqueous sol-gel method. Dielectric spectroscopy was used to analyze the electrical properties of these structured liquids. This analysis allows for a more complete understanding of the various chemical interactions involved and the gel’s structure when electrical current is applied at various frequencies.

Samuel Kor
Major: Healthcare Administration and Policy
Faculty Sponsor: Dr. Karin van Dijk
3:50-4:10 p.m., Harper 3029

“Visualization of JNK Signaling Dynamics in Living Cells”

JNK (c-Jun N-terminal kinase) is associated with cellular proliferation, differentiation, and inflammation. A second generation genetically encoded fluorescence resonance energy transfer (FRET) based biosensor called JNKAR2 (JNK activity reporter) is used to observe stress-induced JNK activity using live-cell fluorescence microscopy. Dynamics of subcellular JNK signaling are monitored using JNKAR2 with specific localization sequences. JNK in HeLa cells are induced by anisomycin, a ribotoxic antibiotic, or TNF-α, a proinflammatory cytokine. Examining activity dynamics, we found that anisomycin induced a higher overall maximum emission response than TNF-α, and there was no significant difference between nuclear and cytoplasmic JNK activities induced by TNF-α.

Clint Kroeker
Major: Chemistry
Faculty Sponsor: Dr. James Fletcher
3:29 p.m., Harper 3028

“Preparation of 2,6-bis(1-substituted-1,2,3-triazol-4-yl)pyridine Chelators for Enhancing the Aqueous Solubility of Lanthanide Complexes”

Lanthanide ions such as Eu(III), Dy(III), Tb(III) and Sm(III) possess properties attractive for bioimaging applications, including strong and sharp visible wavelength fluorescence emission. To promote strong fluorescence emission, such trivalent lanthanide ions must be coordinated to chelating units capable of acting as an energy-transfer antenna and excluding the coordination of O-H functionality at the metal center. It has been recently reported that the neutral tridentate chelator 2,6-bis(1-benzyl-1,2,3-triazol-4-yl) pyridine forms stable 3:1 complexes with trivalent lanthanide ions. Unfortunately, these complexes display limited aqueous solubility, limiting their potential utility in bioimaging applications. The goal of this project was to develop new derivatives of this chelator in order to improve the water solubility of resulting lanthanide complexes while preserving the desirable fluorescence emission properties.
“The Effects of Environmental Enrichment on Nicotine Rewards in the Rat”

Addiction to cigarettes and nicotine daily plagues millions of people. To investigate this addiction, the rewarding properties of nicotine in rats reared in different environments were tested using the Conditioned Place Preference Model. Rats were raised in enriched and impoverished environments during adolescence and were tested across different dosages of nicotine on their ability to acquire addiction, modeled as preference. If a difference in ability is found, it could be concluded that exposure to novelty during development can affect addiction to drugs later in adulthood. Exposure could then also be used as a preventative method in adolescents.


Bioterrorism is a global issue that has increasingly become the focus of many countries and their governments. Using fuzzy mathematics, this paper creates a model that determines a country’s vulnerability to a bioterrorism attack. Importance is placed on, first, a country’s vulnerability to smallpox, anthrax, Ebola, plague, and botulism outbreaks; and, second, the psychological vulnerability of the target population to fear and anxiety. Because fuzzy math considers confidence intervals, it allows for the “gray area” that permeates this global issue. This analysis considers 173 countries using data from the CIA World Factbook. The model is tested and conclusions are generated for a country’s vulnerability to an infectious agent, psychological vulnerability, and overall vulnerability.

“Not All That Glitters is Gold, Not All Philosophy Induces Migraines”

From Plato’s records to Henry James’ tales, philosophy and literature are bound together in the narrative of the progression of each. Inspired by the Symposium, this project demonstrates literature’s ability to portray significant philosophical concepts without the dense and difficult text often found in treatises. The boundaries of a literary component are explored, and original demonstrations written.

“Income Inequality and Political Efficacy in the United States”

This study examines the influence of economic inequality upon Americans’ political efficacy (sense of their ability to influence government). I offer two hypotheses: first, that individuals in states
with higher inequality will have lower political efficacy, and second, that individuals with greater concern about inequality will have lower efficacy. The results of a multivariate regression indicate that neither state inequality nor inequality concern are significant in determining efficacy. However, individuals from high-inequality states have a reduced likelihood of voting. I conclude that, while inequality may significantly affect Americans’ thoughts on their political capacities, it does impact their political behavior.

Rachel Meisinger
Major: Psychology
Faculty Sponsor: Dr. Corey Guenther
3:25-3:45 p.m., Harper 3027a

“Examining the Relationship between Self-Esteem Stability and Academic Performance in Students with ADHD”

This study seeks to examine the link between stability of self-esteem and level of intrinsic motivation in students with Attention-Deficit/Hyperactivity Disorder (ADHD) and if this predicts academic achievement or underachievement in these individuals. It is predicted that children with ADHD will have unstable self-esteem, which is linked to a learning orientation directed toward self-esteem protection rather than toward enhancing learning. Identifying this link would be critical to better understanding the academic deficits found in students with ADHD. Furthermore, it would help to identify strategies for improving academic motivation in this population without fostering a sense of stable low self-esteem.

Anne Mirich
Major: Chemistry
Faculty Sponsor: Dr. Bruce Mattson
3:00-3:20 p.m., Harper 3027a

“The Preliminary Investigation into the Mechanism of Alkane Hydroxylation by Water Soluble OxoFe(IV) Porphyrins, Completed at Princeton University Summer 2012”

Porphyrens, in the context of heme irons, are important in a variety of biological contexts from O2 storage to drug metabolism. OxoFe(IV) porphyrins are known to oxidize hydrocarbons, but unlike in the consensus mechanism of Cytochrome P450 where oxoFe(IV) porphyrin cation radical acts as the oxidant, there is considerable debate as to the mechanism of oxidation. Kinetic analysis for the oxidation at high pHs shows an inversion of reactivity based on ligand electronics. While such an inversion can be attributed to a disproportionation as is proposed by Newcomb and co-workers such an inversion may be due to the accessing of an oxo-hydroxo prototropy.

Kayla Nelson
Major: Psychology
Faculty Sponsor: Dr. Matthew Huss
3:01 p.m., Harper 3023 North

“The Predictors of URICA Scores and Relapse Rates in Dually-Diagnosed Patients: Looking at Illicitness of Drug and Reason for Treatment”

This study examined factors that may predict higher URICA scores in dually-diagnosed patients receiving treatment from a non-profit residential program. It was hypothesized that specific factors such as voluntary admission into treatment and use of non-illicit sub-
Abstracts

stances would predict greater chances of relapse. Results showed that there was no significant mean difference in intake URICA scores or discharge URICA scores across patients for illicitness of substance and there was a significant mean difference in intake URICA scores. URICA scores were also used to predict relapse and intake URICA scores had a significant mean difference between those that relapsed by the three month follow-up and those who had not.

Seella Nimmo
Major: History
Faculty Sponsor: Dr. Michael Hawkins
3:50-4:10 p.m., Harper 3029a

“Den of Shadows: Cultural Attitudes in Indochina and the Vietnam War in Relation to the Emergence of Modern Cambodia and Laos”

My research focuses on the impact of cultural attitudes within Indochina and international relations in shaping the present day nations of Cambodia and Laos. In order to understand the issues facing Cambodia and Laos today, it is important to analyze the history of how both countries developed. By comparing how certain influences have led to divergences and convergences throughout Cambodian and Laotian history it will hopefully be possible to uncover why these two countries have evolved into their present states.

Emmett O’Keefe
Major: History
Faculty Sponsor: Dr. Heather Fryer
3:00-3:20 p.m., Harper 3029a

“Men and Women For and With Others: The Omaha De Porres Club and the Coca-Cola Boycott of 1951”

From 1947 into the mid-1960s, the Omaha De Porres Club fought for civil rights for African Americans in Omaha and stood as an example of Creighton’s Jesuit values and identity. During a boycott of the Coca-Cola Bottling Plant in the spring of 1951, the De Porres Club demonstrated what a group of Creighton students and community members could do when driven by a commitment to human dignity and equality. The De Porres Club not only affected real change in Omaha, but gave Creighton University an example of what it means to truly be men and women for and with others.

John Otto
Major: Chemistry
Faculty Sponsor: Dr. Brad Parsons
2:35-2:55 p.m., Harper 3027a

“Raman Spectroscopic Determination of Uptake and Reaction Kinetics of Optically Trapped Aerosols”

A study of uptake and reaction kinetics of aerosols confined in an optical trap will be made via Raman spectroscopy. The aim of this study is to further understand the atmospheric processing that aerosols undergo after formation, specifically in regards to global climate effects.
Abstracts

Zoran Pavlovic  
Major: Biochemistry  
Faculty Sponsor: Dr. Juliane Soukup  
3:43 p.m., Harper 3028

“Evolutionary Conservation of a Potential Mammalian Riboswitch”

Riboswitches are a type of noncoding RNA sequence found in untranslated regions of mainly bacterial mRNAs. We are interested in identifying and investigating the structure and function of a potential mammalian riboswitch conserved among a wide variety of species that is thought to control polyamine biosynthesis. We hypothesize that the potential riboswitch will bind specifically to a ligand and demonstrate conformational changes upon ligand binding. Moreover, we are using various analogs of the natural ligand that differ slightly in the polyamine structure and stereochemistry to further investigate the specificity and affinity of binding between the riboswitch and ligand. Our preliminary results indicate that the RNAs from diverse species possess similar binding affinities and specificities. The identification of riboswitches in mammals could be useful as therapeutic targets for modulating gene expression, particularly in cancer growth.

Abstracts

Mithra Pirooz  
Major: Psychology  
Faculty Sponsor: Dr. Jill Brown  
4:15-4:35 p.m., Harper 3029a

“Creciendo Sin Sol: An Autoethnography about My Time Spent Working with Children with Disabilities in the Dominican Republic”

During my time spent studying abroad, I became passionate about many social issues. The care of individuals with disabilities in developing countries is one such issue. Autoethnography, a qualitative research method, is applied to examine my experiences volunteering at an orphanage for children with disabilities in the Dominican Republic. I discuss the stories of several children, and the relationships forged with them. Such a qualitative research method allows for the consideration of researcher biases, and for the advocacy of social issues.

Jared Ruchensky  
Major: Psychology  
Faculty Sponsor: Dr. Isabelle Cherney  
2:47 p.m., Harper 3023 North

“The Relationship Between Eating Disorders, Depression, and Intrasexual Competition”

Evolutionary theory suggests opposing mechanisms for eating disorders and depression. The social ranking approach predicts lower levels of competition, while the sexual competition hypothesis predicts higher levels of competition. This study examined these disorders’ relationship to competition and rank-related constructs, such as self-esteem, loneliness, and perceived mate value. The results suggest a complex relationship, and found positive relation-
Abstracts

ships between eating disorder symptoms, depressive symptoms, and competition variables. These relationships suggest competition and social rank as evolutionary links between these disorders. This study suggests much more future work is needed to fully understand an evolutionary approach to depression and eating disorders.

Elizabeth Scheer
Major: Psychology
Faculty: Dr. Corey Guenther
3:50-4:10 p.m., Harper 3027a

“Self-Regulation Capacities and the Extraversion-Introversion Personality Dimension”

This research explores the relationship between self-regulation (modifying or controlling responses to produce certain outcomes) and the extraversion-introversion personality dimension. Research suggests introverts are more likely to be low self-monitors, meaning they tend to display consistent dispositions, while extraverts are more likely to be high self-monitors, adapting their behavior and disposition for different circumstances. The tendency for extraverts to self-monitor suggests they practice a high frequency of self-regulation, and more frequent self-regulation practice points to stronger self-regulatory capacities. Thus, expected results should show that extraverts display less ego depletion when completing a self-regulation task that follows a preliminary self-regulation task.

Kyle Serreyn
Major: Exercise Science
Faculty Sponsor: Dr. Joan Eckerson
2:54 p.m., Harper 3023 North

“Creatine and Immune Function”

Creatine is known for its effects on human strength and power performance. We are testing, in addition to standard measures of strength and power, the effects of creatine on body composition and immune function. Sedentary and active subjects receive either creatine or a placebo for the duration of a 28-day loading period. At baseline, one week, and completion, strength, power, and body composition measurements are taken along with comprehensive blood work to track various immune markers. This double-blind study will attempt to ascertain the effects of creatine on these immune markers and body composition.

Michelle Skaff
Major: Medical Anthropology
Faculty Sponsor: Dr. Alexander Roedlach
2:05-2:25 p.m., Harper 3029

“Financial Education and Health: Creighton’s Financial Success Program”

Existing research suggests a strong association between poverty, gender, and health. The research, on which this presentation is based, focused on this association by studying Creighton University’s Financial Success Program using qualitative methods: observations, participant observation, and interviews. This program’s goal is to provide financial education to single, low-income mothers. The research explored factors that prevent low-income women from accessing health care, and discovered positive changes in program participants’ health as a result of having completed the program.
Abstracts

Alexander Stock
Major: Biochemistry
Faculty Sponsor: Dr. Juliane Soukup
3:36 p.m., Harper 3028

“GlmS Ribozyme Mechanism and Development and Delivery of Artificial Agonists as Candidate Antibiotics”

Riboswitches are found in non-coding regions of mRNA molecules, and gene expression is modulated when metabolite binds directly to the RNA. Many riboswitches, once liganded, repress expression of associated or adjacent genes involved in the synthesis of the metabolite, providing an efficient feedback mechanism of genetic control. The glmS riboswitch binds to glucosamine-6-phosphate (GlcN6P), a building block of the cell wall in Gram-positive bacteria, and undergoes self-cleavage resulting in inactivation of the mRNA. We have shown that the ligand amine and phosphate functionalities of GlcN6P are essential for binding of the metabolite to the riboswitch RNA and for catalysis by the glmS catalytic RNA (ribozyme). These requirements for binding and catalysis of the GlcN6P-dependent riboswitch/ribozyme have been used to design and synthesize novel ligand analogs. The goal of this project is to determine how to deliver GlcN6P and similar synthetic analogues into Gram-positive bacteria in order to down regulate glmS gene expression and ultimately inhibit bacterial cell wall synthesis. The use of nanoparticles is being investigated as a possible delivery mechanism.

Erin Triplet
Major: Biology
Faculty Sponsor: Dr. Nancy Hanson
2:35-2:55 p.m., Harper 3029

“H-NS and H-NS-like Mediation of Gene Transcription in Gram-Negative Bacteria”

Antibiotic resistance is one of the most serious health threats facing the world today, causing approximately 90,000 deaths in the United States annually according to the CDC. This number is on the rise as more bacteria strains develop resistance. Solely developing new drugs is an ineffective strategy. More information on the mechanism by which salutary bacteria become virulent and resistant is necessary. My research investigates gene regulation in Escherichia coli clinical isolates involving H-NS and an interactive suite of transcription factors. We characterized them by sequence evaluation to determine how sequence modifications may lead to modifications in gene product function.

Megan Turco
Major: Philosophy
Faculty Sponsor: Dr. Randolph Feezell
3:50-4:10 p.m., Harper 3027

“The Argument from Evil”

The problem that evil poses for the rationality of theism is a classic and enduring challenge that has been the focus of philosophical discussion for quite some time. The philosophical inquiry into the problem of evil has in recent times shifted from issues concerning the logical consistency of theism and evil, to what is commonly referred to as the “evidential problem of evil.” I will consider the multidimensionality of the argument from evil in light of current philosophical literature.
Abstracts

Veronica Urbik
Major: Biology
Faculty Sponsor: Dr. Patrick Swanson
4:11 p.m., Harper 3028

“Bcl2 Transgene Expression Promotes Increased Expression of Immunoglobulin λ-chain-rearrangement in Mice in an Effort to Rescue Development”

V(D)J recombination is a way of recombining genes in the early formation of B-cells and T-cells to create antibodies to react to antigens that an organism may encounter. In conditionally knocked out VprBP mice, B-cell development is hindered at the pro-B to pre-B transition. These conditionally knocked out VprBP mice, when bred with Bcl2 mice, have been shown to partially rescue the development of the B cells. These double transgenic mice expressed higher than normal lambda rearrangement on the light chain. To examine receptor editing at a later stage, we used Weigert mice, which have rearranged VH heavy chains, allowing B-cells to bypass V(D)J recombination. We examined the frequency of recombination on these regions in comparison to a wild type genome.

Karen Vanderzanden
Major: Psychology
Faculty Sponsor: Dr. Corey Guenther
3:00-3:20 p.m., Harper 3029

“The Role of Threat Severity in the Processing of Preference-Inconsistent Feedback”

Past research on the extent to which individuals process favorable and threatening self-relevant feedback has yielded inconsistent findings. The present study seeks to identify a potential moderator of these discrepant findings, namely, the threat severity of the unfavorable feedback. It is predicted that negative, preference-inconsistent feedback will be processed at a deeper level and thus recalled more efficiently when it has more severe implications for the self (e.g., threatening health feedback) compared to less severe feedback (e.g., negative personality feedback), which may be processed more shallowly given its minimal risk to the self.

Corbin Weaver
Major: Medical Anthropology
Faculty Sponsors: Dr. Alexander Roedlach and Dr. Laura Heinemann
3:25-3:45 p.m., Harper 3029a

“Refugee Health Needs in Creighton University’s Florence Clinic”

Refugees in the United States tend to be one of the most overlooked groups in city populations. These newcomers are left to traverse the customs of the United States with limited governmental assistance. One of the most important yet frequently problematic aspects of life in the United States for refugees is access to healthcare services. Many obstacles prevent refugees from receiving adequate, culturally sensitive medical care. The quality of existent clinics is of utmost importance for the health of refugee populations. Creighton’s Florence Clinic in Omaha, Nebraska has long been a medical resource for the significant refugee population of the city. The goal of this research was to identify the health needs of the refugees whom the Florence Clinic serves. This qualitative study identifies the perceived needs and concerns of the refugees along with the congruence of these perceptions with the actual care the refugee receives.
Abstracts

Brittany Zastrow
Major: Psychology
Faculty Sponsor: Dr. Lee Budesheim
3:08 p.m., Harper 3023 North

“Depth versus Breadth: The Impact of Differences in Undergraduate Research Experiences on Graduate School Admissions Decisions”

This research aims to understand the importance of various undergraduate research experiences relative to admission to clinical and counseling Ph.D. and Masters’ programs. We have examined the importance of breadth of research vs. depth of research both in the target area (clinical psychology) without product, depth of research in the target area vs. depth of research outside the target area (any area of psychology except clinical) both with product, and breadth of research in the target area vs. depth of research outside the target area, both without product. The results of this study offer information pertinent to undergraduate students aiming to apply to these types of programs.

About the Honors Program

Honors Program Mission Statement

Rooted in the university’s Christian, Catholic, and Jesuit traditions, the new Honors Program relies on the belief, articulated by Pope John Paul II, that “the united endeavor of intelligence and faith will enable people to come to the full measure of their humanity.” Its goal is to foster a community committed to the ongoing education of students and faculty members as fellow seekers for truth. The program seeks individuals of all faiths and backgrounds who are intelligent, well prepared academically, highly motivated, and academically adventurous. The curriculum then immerses these students in an academically rigorous but flexible program of study guided by a faculty mentor who is charged with paying special attention to the personal dimension of learning. The program ultimately understands itself as a fellowship of inquiry whose individual members have dedicated themselves without reserve to love of learning.

The program is designed for talented imaginative students desirous of participation in small, discussion-oriented classes and in courses on interdisciplinary and topical issues. It provides students with special opportunities and challenges to enhance their undergraduate experience and to contribute to the intellectual and cultural life of the University. The program also offers eligible students the opportunity to pursue a course of study that complements her or his major.

Criteria for admission to the Honors Program include academic achievement and demonstrable interest in the program’s aims and aspirations. Required application materials include an activities resume and two essays.
About the Honors Program

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Dr. Julianne Soukup
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