Celebration of Undergraduate Scholarship
April 20, 2011
VALPARAISO UNIVERSITY
CELEBRATION OF UNDERGRADUATE SCHOLARSHIP
Harre Union Ballrooms
April 20, 2011

8:30 a.m. – 6:30 p.m.  Posters on Display
8:30 a.m. – 10:30 a.m.  Poster and Oral Paper Presentation Judging
10:30 a.m. – 6:30 p.m.  Open Viewing for Campus Community
11:00 a.m. – 11:30 a.m.  Keynote Speaker: Dr. Jeff Will, Associate Professor of Electrical and Computer Engineering
12:00 p.m. – 1:00 p.m.  Lunch for Student Presenters
2:30 p.m. – 3:00 p.m.  Awards Presentation
6:30 p.m.  Students Take Down Posters

Deans’ Choice Presentations
Harre Union Ballroom C
3:00 – 5:15 p.m.

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STEM Faculty Publication Reception
Harre Union Ballroom B
5:30 – 6:30 p.m.
Overview of the Celebration

The Celebration of Undergraduate Scholarship (CUS) is a conference that allows undergraduate students to showcase their creative and/or scholarly work and research in a professional format. The Celebration began in 1998 as an idea from an interdisciplinary group of faculty who had attended national meetings on the role of undergraduate research in the college experience. Students who have worked on class projects, senior projects and theses, or independent research projects and scholarship participate in the Celebration. In addition to poster and oral presentations, the Deans of Valparaiso University’s five undergraduate colleges select students to represent their colleges at the Deans’ Choice Presentations, and these students give oral presentations in an afternoon program. As part of the Celebration, a faculty member who has involved students in his or her research program gives a keynote address.

Keynote Presentation

Undergraduate Scholarship at Valpo: A Unique Opportunity

By Dr. Jeff Will

Valparaiso University offers a wealth of opportunities to undergraduates to participate in research and scholarship. This presentation by Dr. Jeff Will highlights the student research ongoing in the College of Engineering and covers the benefits and advantages all students have when getting involved in undergraduate scholarship.

About the Keynote Speaker

Jeff Will, Ph.D.
Associate Professor of Electrical and Computer Engineering
Department of Electrical and Computer Engineering, College of Engineering

Dr. Jeff Will is an associate professor of electrical and computer engineering at Valparaiso University. His research focuses on the application of virtual reality for undergraduate education. He established the Scientific Visualization Laboratory eight years ago under a grant from the National Science Foundation and continues to work in furthering educational methodologies using virtual reality.

Dr. Will has been working with undergraduates in his research for each of the ten years he has served at Valpo. He feels that a primarily undergraduate institution such as Valpo offers a unique opportunity for students wanting to get involved in research, and says that one of the most rewarding parts of his job is getting to work one-on-one with students in special projects.
Facial Recognition: Training Participants to Detect Genuine Smiles

Ryan Abraham, Nathanael Keiser, Paul Allison, Alyssa Abbate

Departmental Affiliation: Psychology
College of Arts and Sciences

Nonverbal behaviors have the ability to affect how we perceive social communications. One of these nonverbal behaviors, a smile, is not always genuinely expressed. Our experiment attempted to improve discernment between genuine and fake smiles by manipulating training and feedback. The training/feedback group received feedback for each video and training. Our control was the no training/no feedback group, in which participants viewed a PowerPoint that presented smile information not relevant to distinguishing among smiles. The training group was given applicable information, through PowerPoint, on distinguishing among smiles along with viewing two videos of genuine and fake smiles. Prior to training, participants viewed 10 smile videos and marked whether they believed the smile was genuine or fake. Following training, the participants viewed 10 new videos. Our sample was comprised of 98 participants from the General Psychology course at Valparaiso University. The results indicated that a very brief and simple training program improved participants’ ability to distinguish between genuine and fake smiles. Surprisingly, our feedback manipulation did not improve detection.

Information about the Authors:
Ryan, Nate, Paul, and Alyssa are all junior psychology majors at Valparaiso University and plan on attending graduate school after their undergraduate experience.

Faculty Sponsor: Dr. Jennifer Winquist

Student Contact: nate.keiser@valpo.edu

The Effect of Training on Smile Detection

Christine Albain, Stephanie Kuipers, Charla Trubey, Shannon Riley

Departmental Affiliation: Psychology
College of Arts and Sciences

The purpose of this study was to determine whether training combined with practice/feedback could improve participants’ ability to correctly distinguish between genuine and fake smiles. Participants watched twenty video clips of people smiling and were asked to mark whether each smile was genuine or fake and how confident they were in their answers. A PowerPoint presentation on characteristics of genuine smiles and practice/feedback was used to train the participants. Participants also took a smile knowledge test. They were asked to mark which characteristics were present in genuine smiles. Our study found that training significantly improved the smile knowledge test scores, but did not have a significant effect on ability to distinguish between genuine and fake smiles or on confidence.

Information about the Authors:
All of the authors are sophomore psychology majors at Valparaiso University who plan to further their education after they attain their bachelor's degree. This is their first research presentation.

Faculty Sponsor: Dr. Jennifer Winquist

Student Contact: christine.albain@valpo.edu

Impacts of the Species Elaeagnus umbellate on the Soil and Water Quality of the Pierce Cedar Creek Institute Ecosystem

Yacoub Aljobeh, Kristin Engerer, Dr. Zuhdi Aljobeh

Departmental Affiliation: Civil Engineering/Chemistry/Biology
College of Engineering and College of Arts and Sciences

The species Elaeagnus umbellate, more commonly known as autumn olive, is a shrub that is invasive to the United States and indigenous to East Asia. Even though the autumn olive is not native to North America, it was able to thrive and adapt to the new environment by using its ability to fix nitrogen. Nitrogen-fixing is a process where plants intake molecular nitrogen from the atmosphere and convert it into other forms of nitrogen that can be used by the plants. One of the nitrogen-fixing by-products is nitrate. Excessive amounts of nitrate can easily leach from the plant’s root region into underlying aquifer systems. Relatively small amounts (>10mg/L) of nitrate in the environment are known to be toxic to humans and aquatic life. This study was conducted to assess the impact of Elaeagnus umbellate on nitrate concentrations in its surrounding soil and groundwater. Thirty plots were selected for collecting groundwater and soil samples. Fifteen of those plots were dominated by mature E. umbellate. The other fifteen plots were dominated by native grass species. Water and soil samples were collected two feet below the ground surface (root zones of the autumn olive plants). Samples were collected during the growing
season, in ten day intervals during the summer of 2010, and analyzed for the respective concentrations of nitrate, ammonia, total nitrogen, potassium, calcium, and magnesium. The data obtained from these analyses was statistically analyzed. The results of the samples collected from the autumn olive dominated plots showed an increase in the concentrations of nitrates and other nitrogen forms. However, statistical t-tests showed that this increase is not significantly different compared to results of the control plots dominated by native grass species.

Information about the Authors:
Yacoub Aljobeh is a biology and chemistry major, and Kristin Engerer is a civil engineering and chemistry major. The faculty mentor is Professor Zuhdi Aljobeh, Ph.D., P.E., of the Civil Engineering Department.

Faculty Sponsor: Dr. Zuhdi Aljobeh

Student Contact: yacoub.aljobeh@valpo.edu

Can You Spot the Fake?
Paul Allison, Alyssa Abbate, Ryan Abraham, and Nate Keiser

Departmental Affiliation: Psychology
College of Arts and Sciences

The ability to correctly interpret smiles is a skill that can be helpful in many aspects of life. One key feature that people look at is a smile, but smiles may not always be genuine. In our study, we focused on the detection of genuine and fake smiles and trained subjects to detect deception. The first training group was given applicable information, through PowerPoint, on distinguishing between smiles along with two videos presenting a genuine and fake smile. The second group viewed a PowerPoint with applicable information without videos. The third group viewed a PowerPoint containing just videos. Our control group was asked to think about situations where a fake or genuine smile would be used. Before training, participants viewed 10 smile videos, and indicated whether each smile was genuine or fake. Following training, the participants viewed 10 new videos and again indicated whether each smile was genuine or fake. We hypothesized that the training groups would identify more smiles correctly than the control group. One week later, all groups viewed the same 20 videos again to determine whether the training had a lasting effect.
public relations. His future goal is to become a professional soccer player.

**Faculty Sponsor:** Dr. Bonita Neff

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**The Use of Independent Reading in the Middle School Classroom**

Elise Appold, Del Gillispie

**Departmental Affiliation:** Education
College of Arts and Sciences

Currently, I am observing in an 8th grade language arts class, where the students I work with like to do the bare minimum to get by in school. The teacher has concerns that the students' reading is not self-motivated. To address this problem, the teacher and I would like to see an independent reading plan be required for the students. The surveys I have developed will ask students, before and after they are reading independently, how prepared they feel for class each day. Also, I will be interviewing the teacher to hear her opinions about the positive and negative aspects of "making" students read independently.

**Information about the Author:**
Elise Appold is a junior studying middle level education with concentrations in language arts and social studies. She is currently completing observations in 7th and 8th grade literature classes, which is where her interest in independent student reading began. She enjoys tutoring 5th graders each week with VU's Study Buddy program. Elise will fulfill her semester of student teaching in the spring of 2011. After graduation, she hopes to teach 8th grade in a Lutheran school.

**Faculty Sponsor:** Dr. Del Gillispie

**Student Contact:** elise.appold@valpo.edu

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**Lazy Golfing**

Didar Ashkerbekov, Max Hougas

**Departmental Affiliation:** Mathematics and Computer Science
College of Arts and Sciences

Walking golfers are expected to leave their golf bags just outside the edge of the green while they are putting the ball. We construct a simple model of this situation, in which the green is assumed to be a circle with the hole at the center and the golfer one-putts the ball. (He or she is a great golfer!) We construct a function to determine the distance that the golfer walks from his or her approach shot on the green, and then to the next tee box. Given this model, we determine the optimal location for leaving the golf bag in order to minimize the walking that the golfer is required to do.

**Information about the Authors:**
Didar Ashkerbekov is an electrical engineering major from Kazakhstan. Max Hougas is a computer engineering major from Wisconsin. Both students have had extensive mathematical experience both in the form of raw math classes as well as more practical experience in applying mathematical concepts to engineering problems.

**Faculty Sponsor:** Dr. Rick Gillman

**Student Contact:** maxwell.hougas@valpo.edu

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**An Improved Method for Quantifying the Stiffness of Running Shoes**

Jorie Ballun, Kyle Zobeck

**Departmental Affiliation:** Mechanical Engineering
College of Engineering

The purpose of running shoes is to protect feet from injury by stabilizing motion and cushioning impact. As material technology and product testing develop, shoes can offer more protection through advanced designs. A typical test for running shoes is a flexion test in which the shoe is bent through a fixed angle and the applied force is measured. Most tests bend the forefoot of a shoe, but this characterizes stiffness over a limited portion of the shoe. The goal of this research is to develop an improved flexion test by evaluating and quantifying the stiffness of running shoes in both the forefoot and mid-foot sections. To facilitate the measurement of shoe flexion at various locations, an apparatus was designed so that the distance between the fixed end of the shoe and the applied load is adjustable, adapting to a range of shoe sizes and bend lengths. Preliminary data agree with established tests and illustrate a difference in stiffness values at the two locations. As more testing is performed with more bend locations, a better shoe stiffness profile can be determined. The results generated with this testing method will be used to better evaluate shoe design and performance for injury prevention.
Information about the Authors:
The College of Engineering was approached by a local podiatrist, asking for a team to perform research for an idea he had about the correlation between shoe stiffness and lower leg injuries. Kyle Zobeck and Jorie Ballun were chosen to perform the material testing portion of the project since they expressed an interest in the subject. Both are student-athletes and appreciate the design and performance of quality shoes. Currently, they are developing their test method and working on pairing the information with research on impact forces exerted on feet during the gait cycle in order to determine if there is a correct amount of shoe stiffness that will reduce common runners’ injuries such as plantar fasciitis. Ideally, their work will create opportunities for improvement in the shoe design and podiatry fields.

Faculty Sponsor: Dr. Kathleen Sevener

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Circle the Cat: Developing Intelligent Strategies for a Simple Two-Player Game

Kirk Baly, Michael Lay, Owen Prough

Departmental Affiliation: Mathematics and Computer Science
College of Arts and Sciences

Circle the Cat is an adaptation of the classic mathematical puzzle Qudraphage in which a cat attempts to escape a hexagonal board, but after each move one hexagon is blocked. We have coded a simulation of this classic puzzle. The result of our development allows for the implementation of varying strategies to computationally examine their effectiveness. The code itself, though extensive, is open enough for additions/extensions to be added fairly easily. Analysis of simpler strategies has allowed for improvement of both Cat and Player AI systems. We are currently looking at implementing more advanced systems, perhaps turning to machine learning.

Information about the Author:
Kirk Baly and Owen Prough are junior math/computer science majors. This is their second year on this project. Michael Lay is a freshman computer science major. Their goal for this project is to develop intelligent strategies and analyze the “winnability” of certain initial board configurations.

Faculty Sponsor: Dr. James Caristi

Student Contact: owen.prough@valpo.edu

Measurement of Neutron Reflectivity from a Silicon Crystal: Preparation for an nMDM Measurement

Benjamin Barber

Departmental Affiliation: Physics and Astronomy
NIST SURF Program
College of Arts and Sciences

Physicists from Argonne National Laboratories, Valparaiso University, the University of Hawaii, and the National Institute for Standards and Technology have designed an experiment to use the known neutron magnetic dipole moment (nMDM) to measure Schwinger scattering in silicon (Si), a process whereby the orientation of the magnetic dipole polarization is altered by interactions with the atomic electric fields in a Si crystal. This measurement is intended to be a precursor to a search for a neutron electric dipole moment (nEDM) employing a similar spin rotation via a different interaction. Both measurements depend on neutron Bragg reflections down a slotted Si crystal. For a successful measurement, the neutron beam has to reflect approximately 150 times, without a large loss of beam intensity. This requires a high reflectivity, on the order of 99% reflective. In order to make an accurate measurement of the Schwinger scattering, both the incident neutron beam and the crystal’s reflectivity need to be well understood. In summer 2010, we characterized the newly commissioned ‘nMDM Experiment’ neutron beamline at the NIST Center for Neutron Research, and measured the reflectivity of the slotted Si single crystal intended for the experiment. These measurements laid the groundwork for the coming nMDM Schwinger scattering measurement.

Information about the Author:
Benjamin Barber is a physics and mathematics double major, minoring in mechanical engineering. He has previously worked on VU physics projects with the STAR collaboration. After completing his degree, Benjamin hopes to pursue a graduate degree in accelerator physics. He became interested in this project after a presentation on the current status of the project as part of the VU Physics and Astronomy Department weekly colloquium series.

Faculty Sponsor: Dr. Donald Koetke

Student Contact: ben.barber@valpo.edu
Mapping Statewide Flash Flood Potential Index (FFPI) in Indiana

Evan Bentley

Departmental Affiliation: Geography/Meteorology
College of Arts and Sciences

National Weather Service (NWS) employees must make forecasting decisions on a daily basis. These forecasts are important to save people’s lives and property. One area where the NWS has very little guidance is flash flood prediction. A GIS project was undertaken to create a preliminary flash flood potential index map for the state of Indiana to help weather forecasters issue more accurate flash flood watches and warnings. In this project, slope, soil type, land use, and forest canopy layers were used to create an index map for flash flood potential.

Information about the Author:
Evan Bentley is a senior meteorology major. He is currently a student intern with the National Weather Service’s SCEP program in Indianapolis, Indiana.

Faculty Sponsor: Dr. Bharath Ganesh Babu

Student Contact: evan.bentley@valpo.edu

Porter County Residents’ Attitudes toward the Regional Development Authority

Kyle Bonick, Rob Johnson, Christine Lucente, Mike Dobler

Departmental Affiliation: Political Science
College of Arts and Sciences

The Community Research and Service Center (CRSC) at Valparaiso University conducted a survey of Porter County residents on their opinions about regionalism, the Regional Development Authority (RDA), and some of the projects currently being worked on by the RDA. The CRSC worked to develop a questionnaire that would assess the opinions of Porter County residents on these issues. We took a random sample of 3,500 households in Porter County and mailed them a questionnaire. We received 499 useable responses; almost all were completed by mail with some choosing to fill out the optional on-line survey. In order to compensate for the differences between the sample and the population, as well as to demonstrate how different groups viewed these issues, we controlled for age, gender, income level, how long the respondents have lived in Porter County, the area of the county they are from, and whether they are likely to vote. Overall, respondents indicated that they were in support for the notion of many of the programs under consideration by the RDA. That support drops, though, when respondents are asked whether these programs should be funded by taxpayer money, or when respondents were asked specifically about cooperation with Lake County.

Information about the Authors:
Rob Johnson (Valparaiso, IN) is a senior political science and humanities double major. Upon graduation, Rob will pursue a master's degree in public policy. Kyle Bonick (Merrillville, IN) is a senior political science major. He will be graduating in May and pursuing a JD at Indiana University-Indianapolis in the fall. Christina Lucente (Glendale Heights, IL) is a senior political science major. After graduation in May, she will be pursuing a degree in law. Mike Dobler (Rockford, IL) is a junior political science and German double major. Mike is currently studying abroad in Germany.

Faculty Sponsor: Dr. James Old, Dr. Larry Baas

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Theological Conviviality in “The Religious Banquet”: The Case for Reconciliation between Erasmus and Luther

Kathleen Borchers

Departmental Affiliation: Foreign Languages and Literatures
College of Arts and Sciences

The relationship between the two well-known theologians, Erasmus of Rotterdam and Martin Luther, has been thoroughly discussed over the centuries, especially concerning their debate over free will. Although this debate would eventually lead to a parting of the ways, there was a time during the Reformation when Erasmus and Luther worked to bring about reconciliation between the Roman Catholic Church and the Evangelical Protestants. As a humanist, Erasmus communicated his religious ideas and opinions through a variety of texts and discourses. His dialogue, “The Religious Banquet,” is an unexpectedly useful prism through which to view Erasmus’ commentaries on the Church. The banquet topos itself reflects the convivial desire to unite opposing groups in the hope of avoiding discord and hostile confrontation. Throughout “The Religious Banquet,” Erasmus alludes to disputes that Luther had with the Church, while at the same time issuing warnings to his audience – and perhaps implicitly to Luther – about the dangerous consequences that these
theological arguments might bring about. Although he never directly mentions Luther in this work, Erasmus' choice of the banquet genre suggests that he may have been trying to extend the proverbial olive branch in what was quickly becoming a heated theological debate.

**Information about the Author:**
Kathleen Borchers is a senior international service and French double major. She wrote a senior dissertation in French on this topic last semester, and because she’s also seeking a minor in theology and is a Lutheran deaconess student, she became interested in further exploring the debate between Luther and Erasmus through the lens of one of Erasmus' works. She would like to work abroad doing mission work, teaching, and doing Bible translation after graduation.

**Faculty Sponsor:** Dr. Timothy Tomasik

**Student Contact:** kathleen.borchers@valpo.edu

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**Community Perceptions of Valparaiso University**

Marie Branum

**Departmental Affiliation:** Communication College of Arts and Sciences

Community relations is vital to an organization. Valparaiso University relies on the relationships within the community. For example, the university has a Town and Gown Committee representing the community and the university. This study surveys members of the Valparaiso community to assess the relationships and involvement of community members with the university. A survey was developed to measure attendance at sporting events, art presentations, the chapel, the library, the union, and special presentations on campus. The questionnaire looked at how well the community was informed about events and asked to rate on a Likert Scale the image of Valparaiso University from a community perspective. The last question focused on the importance of Valparaiso University to the city of Valparaiso. This research indicated that reputation management is critical to public relations functions. Other research focused on community relations theory and the importance of relationship building. The results indicated the need for better communication between the community and the university. The respondents did not have a strong feeling of a relationship with the university. However, the respondents indicated a positive response toward the image of the university in terms of quality education and reputation.

**Information about the Author:**
Marie Branum is a senior public relations major and Spanish minor at Valparaiso University. Her past experiences as an intern at the Valparaiso University Office of Integrated Marketing and Communications inspired her to further research the relationships between the university and the Valparaiso community. She is graduating in May and hopes to pursue a career in public relations, ideally in university relations.

**Faculty Sponsor:** Dr. Bonita Neff

**Student Contact:** marie.branum@valpo.edu

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**Modern Public Relations Strategies: Revisiting Wheatley & Timmons’ 1994 First Alert Campaign**

Victoria Brewton, Ricky Hoffman, Megan Hohenstein, Ryan Myers, Martha Ramette

**Departmental Affiliation:** Communication College of Arts and Sciences

Our interest in this subject came after visiting Wheatley & Timmons, a public relations firm headquartered in Chicago, IL. The firm launched an extremely successful public relations campaign for First Alert in 1994. Our public relations class was asked to design an innovative campaign aimed at spreading awareness about carbon monoxide poisoning, acting as though no one had ever heard of it. The facts about deaths related to carbon monoxide are shocking. We had a lot of questions to answer, such as: How much do people really know, what are the most effective techniques for spreading general awareness, and what laws already exist regarding CO detectors? We created a campaign using new technology and current public relations practices. Our strategies were placed in three overarching objectives. The first objective is to spread general awareness through traditional media awareness. The second is to get people to retail stores to purchase the detectors. Our third objective is to spread awareness through enabling publics. In greater detail, our plan is to utilize safety conventions, breaks on homeowners’ insurance, partnering with retail stores and fire departments, and lobbying for stricter building codes.

**Information about the Authors:**
Ryan Myers is a member of the football team at Valpo. His major is sports management. Victoria Brewton is a member of the Chi Omega Sorority and her majors are public relations and English. Ricky Hoffman graduated in December and was a member
of the Lambda Chi Alpha Fraternity. His majors were public relations and German. Megan Hohenstein spends most of her time in the ARC whether it’s playing intramural sports or working. Martha Ramette is a member of the Kappa Kappa Gamma Sorority. Her major is also public relations.

**Faculty Sponsor:** Dr. Bonita Neff

**Student Contact:** victoria.brewton@valpo.edu

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**Best Practice for Insomnia Patients at a Sleep Center**

Jennifer Bronnenberg, Rachshun Hampton, Kelli Martin, Rachael McKay, Jessica Sneed

**Departmental Affiliation:** Nursing
College of Nursing

Sleep disorders affect millions of people worldwide. The purpose of this project was to determine if individuals with sleep disorders can achieve better outcomes with treatment that includes education classes and cognitive therapy than with current treatments which utilize medication and equipment. Seven articles, obtained from a search of CINAHL, JBI, Medline, and Psych Info, were reviewed and critiqued. Studies contained samples of men and women with sleep disorders, reviews of previous studies, and reviews of effective alternative treatments. Designs included systematic reviews, meta-analysis, randomized control, longitudinal two group pre-test posttest, and a narrative review. Findings showed that when traditional pharmacological treatments are combined with alternative therapies, patients have much better outcomes. A decision to include cognitive behavioral therapy (CBT) and music therapy was made. A new education program will include a briefing about therapies for individuals with sleep disorders and a discussion about how to help patients incorporate CBT and music therapy into their current plan for treatment. In the future, patients will be educated about the importance of keeping a sleep journal to evaluate their progress. Patient success will be measured using data from patient journals and a sleep center survey.

**Information about the Authors:**
Jennifer Bronnenberg, Jessica Sneed, Rachshun Hampton, Kelli Martin, and Rachael McKay are senior nursing students who are looking forward to graduation in the spring. They hope to contribute their unique talents to various areas of nursing. Research is an important part of their current studies and will continue to be essential in their future careers.

**Faculty Sponsor:** Dr. Nola Schmidt

**Student Contact:** jessica.sneed@valpo.edu

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**Choosing Valpo: Study on the Impact of Digital Relationships**

Kevin Brown, Marie Branum, Torie Brewton, Amanda Cortese, Alexandria Moulchin, Tyler Poland, Martha Ramette, Rochelle Nicole Reinhold, Peter Volmut, Natalie Zibolski

**Departmental Affiliation:** Communication
College of Arts and Sciences

Prospective college students, often early adapters of technological advances, seek information from digital sources when making a college decision. Different social networking sites, such as Facebook and Twitter, are among the tools that prospective students use. Universities are beginning to implement these tools to build relationships with prospective students. Valparaiso University, too, is adapting to this new technology. The University has a digital presence through its Facebook and Twitter accounts, a YouTube.com channel, and a comprehensive webpage. The primary focus of this study is to see if a relationship is being built between Valparaiso University and its prospective students through these tools. Does Valparaiso University’s online presence attract incoming college students? Are prospective students more informed because they can virtually observe campus life? Are these resources being utilized to their fullest potential? Research focused on answering these questions as well as exploring the best possible way to establish a successful relationship between prospective students and the University. Students in the spring semester of their freshman year were surveyed to learn from their experience over the past twelve months.

**Information about the Authors:**
The authors completed this research as a group project for the PR: Social and Digital Relationships course. The students have chosen academic paths related to public relations or sports media. The authors include Kevin Brown (Racine, WI), Marie Branum (Cedarburg, WI), Torie Brewton (Grand Rapids, MI), Amanda Cortese (Hoffman Estates, IL), Alexandria Moulchin (Antioch, IL), Tyler Poland (Botkins, OH), Martha Ramette (River Forest, IL), Rochelle Nicole Reinhold (Cedar Lake, IN), Peter Volmut (Racine, WI), and Natalie Zibolski (Milwaukee, WI).
Corporate Social Responsibility (CSR) is the New Driver for an Ethical Public Relations Function

Lilia Cecconi

Departmental Affiliation: Communication
College of Arts and Sciences

Difference in Muscle Activation between the Flat Barbell Bench and the Smith Machine

Alex Cikanek

Departmental Affiliation: Physical Education
College of Arts and Sciences

The purpose of this study is to investigate differences in muscle activation between the flat barbell bench and the Smith Machine bench. This study will be done at Valparaiso University on the campus at the fitness center. The participants will consist of two freshmen males who were active in high school...
activities but are now inactive with respect to weight training. This study is significant because knowledge of differences in resistance training in rehabilitation of an injury may be crucial to recovery.

**Information about the Author:**
Alex Cikanek is a senior exercise science major under the supervision of Dr. Kelly Helm. The idea for the project interested him because he has been exercising since his sophomore year in high school. He plans to pursue his master’s in physical therapy and work in professional sports with either the team’s physical therapists or the team’s strength and conditioning coaches.

**Faculty Sponsor:** Dr. Kelly Helm

**Student Contact:** alex.cikanek@valpo.edu

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**Making Reading Fun: Using Reader’s Theater to Increase Interest, Fluency, and Comprehension in Reluctant Readers**

Raimie Conrad, Tiffanie McIver, Ashley Miller, Gabriela Tino

**Departmental Affiliation:** Education
College of Arts and Sciences

Students with reading difficulties don't enjoy reading, especially aloud in front of others. What can improve their interest in reading? Based on current trends demonstrating best practice, the use of Readers Theater may spark this interest for reluctant readers. This is the focus of our study. We are using a pre-test/post-test format with a class of 16 second graders to determine whether students enjoy reading content area material more when it is presented as a play. Each student is individually informally assessed by reading a passage and interviewed with questions exploring how they feel about reading before and after this experience. Every student in the class is tested, but the focus is on the results of the reluctant readers. The students are given parts in a story in which they practice and perform for each other; repeatedly reading stories as they are practiced for performance has been shown to increase fluency. This is especially important for students with reading difficulties and we predict that these students will want to read this material more because they are having fun. We also feel that increased fluency correlates with increased comprehension of the material. This will support their learning in all subject areas.

**Information about the Authors:**
Raimie Conrad is a junior elementary education major, special education minor. She is from Arcadia, CA and would like to pursue a career in the special education field when she graduates. Tiffanie McIver is a junior elementary education major, special education minor from Corona, CA. She hopes to be a second or third grade teacher in the general education field. She became interested in this topic when she saw the interest from the students who participated in Reader's Theater. Ashley Miller is a junior elementary education major, special education minor from Valparaiso. She hopes to become a kindergarten or first grade teacher in the general education classroom. She became interested when she saw the positive responses of Reader's Theater when done. Gabriela Tino is a junior elementary education major, special education minor from Miami, FL. She will be student teaching in Venezuela. In the future, she hopes to teach English to Spanish speaking students.

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**Estimating Economic Loss from Flash Flooding: A Study of Porter County, IN**

Samantha Cornwell

**Departmental Affiliation:** Environmental Science, Geography
College of Arts and Sciences

This project attempted to determine what kinds of losses occurred during the flash floods of September 2009, caused by Hurricane Ike, in Northwest Indiana. Flash floods are dangerous due to how quickly they can overtake humans, houses, vehicles, and property. Flash floods caused Northwest Indiana to be under a State of Emergency, with drastic human and economic losses. Discovering where the problem is and defining the problem can help to prevent future losses. In addition, geographic software was analyzed for its helpfulness for this kind of problem. It was found that current software, including FEMA’s HAZUS-FM, is not suitable for analyzing flash floods for a number of reasons. Adapting the software to flash flood parameters will be the most helpful adjustment for mitigating flood losses. This on-going project was presented at the 2011 Indiana Geographic Information Council Conference.

**Information about the Author:**
Samantha Cornwell is a senior environmental science and professional writing major who is pursuing a career in emergency management. She is interested in
flooding and how to prevent losses during natural disasters.

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**Whose Turf? Public Relations and Marketing in Social Media**

Katie Davis

**Departmental Affiliation:** Communication
College of Nursing, College of Arts and Sciences

Organizations have found Twitter and Facebook to be the most effective way to converse with audiences. Current positions now require new skills to understand, shape, and engage with social networks and online communities. This study examines how organizations structure the management of social media. As the field develops, it is crucial to understand the current trends. By surveying the perception of social media management, one can better understand how organizations will handle digital communication in the future. Professionals were categorized into six professional specialties: Public Relations Agency, Marketing Agency, Corporate Public Relations, Corporate Marketing, Non-Profit Public Relations, and Non-Profit Marketing. In the survey, participants were asked how social media is used in marketing and/or public relations. By bringing the co-orientation model of communication into the research analysis (a comparison of perceptions vs. actual usage to determine gap), the study compared responses from public relations and marketing professionals to represent their specialty. The results indicate there is a division of labor in social media usage for each profession. Public relations professionals utilize social media as a dialogic approach (two-way communication) and marketing professionals do less environmental monitoring and utilize primarily an asymmetrical approach (one-way communication).

**Information about the Author:**

Katie Davis is a senior public relations major with a business minor. She currently interns at Wheatley Timmons Public Relations Agency in Chicago where she became interested in the management of social media. Katie also interned with ExactTarget, an interactive provider of marketing solutions. Last semester, Katie and a team of VU students won the national SAP Marketing Innovators Competition. She plans to graduate in May and pursue a career in digital media.

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**Therapeutic Hypothermia: Protect Your Brain**

Lisa DeBruzzi, Lindsay Hatter, Robin Hedge, Claire McKinney, Jacqueline Schirmer, Julie Takacs, Leah Williams

**Departmental Affiliation:** Nursing
College of Nursing

Heart disease is the number one leading cause of death in America (American Heart Association, 2004). The purpose of this project was to determine best practice regarding the use of therapeutic hypothermia (TH) to reduce cognitive impairment in patients who have a significant myocardial arrest. A review of the literature was conducted in databases using key terms: hypothermia, induced hypothermia, TH, myocardial infarction, myocardial arrest, cardiac arrest, and cognitive impairment. Over 10 articles were critiqued. Samples included adults with out-of-hospital cardiac arrest, adults with out-of-hospital cardiac arrest who were comatose, and cardiac arrest adult victims who were less than 24 hours post myocardial infarction. A variety of designs were used. The use of TH post cardiac arrest compared to those patients who did not receive induced TH was found to reduce cognitive impairment as well as decreased mortality and improved neurological outcomes. A protocol of inducing TH for caring for adult patients post cardiac arrest, within twenty-four hours of the myocardial infarction, was created.

Treatment includes rapidly bringing the temperature to 32-34°C, sedating during TH, paralyzing to suppress heat production, and maintaining the goal temperature at 33°C for 12-24 hours. Other treatment includes suppressing shivering and de-cooling.

**Information about the Authors:**

Lisa DeBruzzi, Lindsay Hatter, Robin Hedge, Claire McKinney, Jacqueline Schirmer, Julie Takacs, and Leah Williams are senior nursing students. They are looking forward to graduation in May, beginning their careers, and helping others. They have enjoyed their time at Valparaiso University and are grateful for the experience the College of Nursing has provided them.

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Learning: Is There a Right Way?

Jenna Duff, Del Gillispie

Departmental Affiliation: Education
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This research project is being conducted to find out what type of learning style, if there is one, is more popular among students. This topic was chosen because, through observation, I have noticed that kids are not fully focused on the classroom, and they do not seem to be paying attention long enough to be learning anything. I hope that through my research and observation I will be able to find a method that works best for students so that I can propose that other teachers use the method in their own classrooms.

Information about the Author:
Jenna Duff is a junior middle school education major at Valparaiso. She is very interested in this topic because she wants to be able to understand her students’ needs and teach them in the best possible way. The co-author is Del Gillispie, an education professor at Valparaiso who is excited about helping Jenna and the rest of the class further their education and prepare them for the classroom.

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Cross-Cultural Educational Fallbacks: A Study of Homeschooling in the Hispanic Community and the Reasons for Its Utilization

Luke Easterday

Departmental Affiliation: Foreign Languages and Literatures
College of Arts and Sciences

A popular belief held by many Americans is that Caucasian families homeschool based on a desire to shield their children from the outside world and to pass on particular religious beliefs. However, among the Hispanic community, homeschooling is often implemented due to a lack of resources in the community. Many Hispanic parents utilize this nontraditional educational method due to a desire to raise their children bilingually, to pass on their cultural heritage, and to have an active role in the academic lives of their children. Quite often, the communities in which Hispanic families live do not have many resources available for Hispanics. An example is the lack of communication between non-English speaking parents and non-Spanish speaking teachers. Additionally, the types of jobs held by many Hispanics prevent them from being active members in the academic lives of their children due to conflicting work and school schedules. By homeschooling, Hispanic parents are able to focus on the education of their children without being hindered by a lack of effective cross-cultural communication. Based on surveys distributed to numerous homeschooling families, no two families homeschool for the same reason. However, many common threads exist, which is beneficial to know in order to make traditional school systems more appealing to Hispanic families.

Information about the Author:
Luke Easterday is a junior Spanish major and business minor. Coming from a rural town in southwest Michigan, Luke was exposed to the Hispanic community when one of his sisters studied abroad in Spain. Luke quickly became fascinated with other cultures and languages. Luke is currently taking an in-depth look at homeschooling in the Hispanic community, as one of his cousins and her Hispanic husband homeschool their bilingual children. This summer Luke plans to work as an intern in Valparaiso, Chile with the YMCA.

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Krueger Middle School Class Schedules Change to Help Manage Behavioral Problems

Ashley Edinger

Departmental Affiliation: Education
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Many of the students in Krueger Middle School are causing disruptions in the classroom. The purpose of this research is to investigate teachers’ attitudes about the new scheduling at Krueger Middle School, explore the benefits of using this new schedule, and analyze the behavior management changes that have taken place in the classroom due to the new schedule. The principal along with other staff members have made a change in the school schedule to try and cope with the behavioral issues. Multiple staff from Krueger Middle School filled out a survey stating the benefits of these changes to students, staff, and the school.

Information about the Author:
The school Ashley researched is near her home. There have been previous behavioral problems in this
school, and she wanted to explore the impacts of their new scheduling.

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The Extent of Visual Media Intake and Its Implications on Women’s Body Perception

Kirsten Eid, Madelyn Horvath, Megan Robbins

Departmental Affiliation: Social Work
College of Arts and Sciences

The aim for this study was to discover the amount of media input that starts to negatively impact women’s self-esteem, specifically media that gives women distorted body ideals. The research hypothesis was that the more visual stimulant a woman received from media, such as films, television, and magazines, the more distorted her ideal body perception became. The sample for this study consisted of a representative sample of college women, ages 18-23, attending Valparaiso University, located in Valparaiso, Indiana. The participants gave their consent to fill out a survey that measured: 1) Media input: The type of visual media consumed by means of film, television, and magazines. Amount of media observed will also be measured in terms of approximate hours per week. 2) Body perception: Body perception was defined as how women view and compare themselves to those around them, specifically using women in the media as the prototype for ideal body image. The knowledge gained from this study will potentially be used to pinpoint where exactly women obtain their constructs of the ideal body image, and whether the amount of media consumed has an impact on that image. Using this knowledge, those who wish to promote a more encompassing, realistic idea of body image can use this research to advocate for and empower women to recognize the media’s distorted body ideals.

Information about the Authors:
Kirsten Eid, Madelyn Horvath, and Megan Robbins are all junior social work majors. Kirsten is currently interning at Family and Youth Services Bureau in Porter, Indiana. After graduation, she hopes to attain a master's degree in the mental health fields and join the military for world travel. Madelyn is currently interning at Dunebrook, a child abuse prevention center, in Michigan City. After graduation, she would like to get her master's degree in social work. Megan is currently interning at Housing Opportunities located in Valparaiso, IN. She hopes to get a master’s in gender studies after graduation.

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Brain-Based Teaching Techniques for Foreign Language Vocabulary Acquisition

Alison Eyer

Departmental Affiliation: Education
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One of the major components of a foreign language classroom is vocabulary acquisition. Without a strong base of vocabulary, students are not able to progress with more difficult vocabulary or grammatical structures. For this research project, I used brain-based vocabulary teaching techniques that connected vocabulary words to students through different means of sensory input such as sight, physical movement, and hearing. To examine the effectiveness of these techniques, I tracked the average percentage on vocabulary quizzes, the range of scores, and number of perfect scores achieved for two different classes. I also introduced a group incentive to find out whether it was effective in increasing vocabulary scores. The data showed that the methods I used were successful in one class while they were not effective in the other. This proved that all classes and students are different, and a variety of teaching techniques should be used to cater to the individual needs of students.

Information about the Author:
Alison Eyer is a Spanish education major with a minor in business administration. After the Education Department trip to Nicaragua and a summer English teaching position in China, she became interested in vocabulary acquisition for foreign language learners. This passion for education and teaching English has led her to pursue an international teaching position after graduation. Currently, she is a finalist for the Fulbright English teaching assistantship in Spain.

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Closing the Generational Gap with Training: A Public Relations Perspective

Alexandra Faust

Departmental Affiliation: Communication
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In the last decade, public relations professionals have been engaged heavily in technology including social media. In fact, the increased use of social media is forcing public relations to require interns and entry-level candidates to have a solid background in this field. However, because public relations professionals work with a wide number of publics, the generational distribution of technology varies according to the willingness to enter into social media. The data from this survey focused on a variety of publics to ascertain the impact of the following hypotheses: H1: Current practices in the workplace require ongoing training in new social media. H2: The difference between social media usage is felt greatly when age is taken into consideration. H3: The knowledge of social media is crucial for all levels of professional practice. The results indicate that training programs greatly close the gap in social media use between generations. Thus, age is not the only factor for determining social media usage. The social media usage is also examined in terms of one’s rhetorical context. The results indicate that the usage of social media is focused on dialogic communication—an interactive approach to rhetorical communication when used within a public relations situation.

Information about the Author:
Alexandra Faust is senior public relations and sociology double major from Westfield, NJ. She has completed several internships with Novo Nordisk and Biosector2. She is also a member of Gamma Phi Beta, PRSSA, Lambda Pi Eta, and is head of the SPARK student agency national Bateman competition team on financial literacy. She plans on working in public relations health issues upon her graduation in May.

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Post-Exercise Blood Lactate Disappearance from Variant Recovery Modes

Christopher M. Gardner

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The purpose of the study is to investigate the relationship between recovery modes, blood lactate disappearance, and power output after an anaerobic maximal test. The two recovery modes that are being investigated are that of passive and active recovery. Testing will consist of subjects completing a Wingate anaerobic test on a cycle ergometer and measuring blood lactate levels while the subjects complete a 15-minute recovery period consisting of either active or passive recovery followed by another Wingate test to measure power output. The study is currently in the early stages of gathering data and forming conclusions.

Information about the Author:
Chris Gardner is a graduating senior majoring in exercise science and minoring in human biology, psychology, and coaching. He completed this study in early 2011 for his exercise science senior project. Chris will be attending graduate school next year to pursue a degree in the field of physical therapy.

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Accurate Perceptions: Race and Gender in the University Setting

Kelsey Gatza, Alissa Kretzmann, Sarah Peters

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College of Arts and Sciences

In light of Valparaiso University’s (VU) renewed vision for increased campus diversity, the researchers conducted a study of the perceptions of VU students about the diversity of VU’s administration and faculty. In this study, the researchers hypothesized that there is a significant relationship between a student’s race or gender and the accuracy of their perception of diversity among VU administration and faculty. In order to ensure a diverse sample, researchers surveyed students from minority student organizations in addition to students passing through the campus union. The researchers compared the student estimates of diversity to actual demographics of VU administration and faculty to determine if the student perception of diversity was accurate. Researchers also gathered student opinions on VU’s success in implementing its diversity goals. Student levels of concern and knowledge of the diversity of VU’s administration and faculty were also measured. These findings will be helpful in determining why some students are either unaware of or overly critical of administration and faculty diversity. Additionally, the results can be used as a tool for assessing patterns of perceptions within students’ racial and gender groups. This implication is important for VU as we strive to meet the needs of our increasingly diverse student population.
Information about the Authors:
Kelsey Gatza is a junior social work major with a Spanish minor. Alisssa Kretzmann is a junior social work major with theology and peace and social justice minors. Sarah Peters is a junior social work major. After returning from study abroad experiences, all three researchers were compelled to investigate aspects of diversity on VU’s campus. Therefore, the researchers chose to conduct this study as part of their junior level social work class, Introduction to Methods of Social Research.

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Novels in the Internet Age: “House of Leaves” and New Media’s Influence in Contemporary Fictional Literature

Tyler Gegg

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The now-ubiquitous nature of the Internet has changed the way we see the world, and these changes must be reflected in how we experience other media forms. Postmodern works such as Harry Mathew’s "The Journalist" have challenged the way we read and electronic literature like Steve Tomasula's "Toe" have stretched the use of the digital to produce stories; but contemporary literature combines the medium and techniques of postmodern literature with the character of the digital. This project explores the influences of the characteristics and attitudes of the Internet medium as they are partially realized in Jonathan Safran Foer's "Extremely Loud and Incredibly Close" and as they are fully realized in Mark Z. Danielewski’s "House of Leaves." It reveals through these examples the focus on multimedia, connectivity, and interactivity imbued in the literary medium through consideration of the Internet-savvy reader. By examining the form and content of these texts, this study shows how literature can come to grips with a medium that may consider neither form nor content but instead motion, comparison, and experience.

Information about the Author:
Tyler Gegg is a junior from Mahomet, Illinois, majoring in English and minoring in humanities and new media journalism. Research on this project was inspired by his coursework with new media forms and his experience with non-literary storytelling media.

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Modeling “Humans vs. Zombies” with Differential Equations

Teryn Gehred, Justin Nettrouer

Departmental Affiliation: Mathematics and Computer Science
College of Arts and Sciences

“Humans vs. Zombies” is a moderated game of tag played by students at Valparaiso University. The game begins with a population of humans who avoid being tagged by zombies to prevent being converted into zombies. We developed a mathematical model of the game using differential equations, based on a variation of a traditional epidemic model. Data was collected from various rounds of the game which we used to validate the model. Throughout the game, special missions are employed to increase competitiveness. We devised new theoretical missions that grant either the human or zombie population an advantage. These missions were then modeled as piece-wise defined differential equations. Using insights from these models, a new form of gameplay could be implemented and become a part of “Humans vs. Zombies” at Valparaiso University.

Information about the Authors:
Teryn Gehred is a freshman biology and mathematics major. Justin Nettrouer is also a freshman and is an actuarial science major. Both students were intrigued by the "Humans vs. Zombies" game played by students when they arrived at Valparaiso University this fall, and were excited to integrate this game into their research. With the intention to pursue a career in medicine, Teryn was very interested in the basic epidemic model used in research, and both students were very interested in learning to use MatLab to model data from the game. They both hope their research may be used to shape new forms of gameplay for "Humans vs. Zombies."

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Exploring the Influence of Personal Identity and Nostalgia on Memory Reconstruction in Thomas Brussig’s Sonnenallee (Sun Avenue)

Emily German

Departmental Affiliation: Foreign Languages and Literatures
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Thomas Brussig ends his novel Sonnenallee with the following sentiment: "Glückliche Menschen haben ein schlechtes Gedächtnis und reiche Erinnerungen" (loose translation: "Happy people have a bad memory and rich [or abundant] memories"). Through the protagonist, Micha Kuppisch, Brussig explores the effects of both identity and nostalgia on the perceived worth of any one person's or group's history. This discussion revolves around the following questions: What effect do positive and negative experiences have on memory reconstruction? How much does retrospect influence a story? What are an author's motivations for writing a story? And how could this all relate to Germany's recent reunification (1990) and dire search for collective identity based on a largely tragic past century of events? Through an examination of these dilemmas, I argue that Brussig shows us the necessity for "a bad memory and rich memories"; that is, the importance of an honest reconciling of negative events of the past with those which are positive. Through it comes a healing process at both the levels of individual and community that allows all parties to embrace that which is meaningful from the past in order to move with freedom towards a better ("happier") future.

Information about the Author:
Emily German is a senior German and music double major and hopes to eventually teach both subjects in a high school. The topic of memory reconstruction and remembering influences how she can or should teach students about a relatively difficult period of time in German history (i.e. WWII and Hitler). On a personal level, she continues to explore her identity and worth in relation to events and people that have shaped her own past.

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Applying Genetic Algorithms to Solve Logic-Based Games

Timothy Goodrich, Kyle Jackson, Ian Jones

Departmental Affiliation: Mathematics and Computer Science
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The game “Mastermind” is where four (out of six available) non-repeating hidden colors are chosen and the player has to guess the combination. The game indicates to the player (1) how many correct colors are in the combination and (2) the number of colors in the correct position. Our first computer program to play the game randomly guessed combinations. The average number of guesses to reach the goal was 360. We then started to apply genetic algorithms to the program. Genetic algorithms mimic biological evolution. Each generation of guesses breeds offspring guesses based on its fitness (how close to the goal) and a degree of mutation. Our program allows the user to enter parameters to alter the algorithm. These parameters included how many guesses are potential breeders at one time and factors determining fitness. Fitness is a measure of proximity to the correct combination, determined by correct colors and placements. Our best average number of generations is now 112. Future enhancement include modeling combinations of breeders as male and female, algorithms for selective breeding, and algorithms for determining the initial pool of breeders. We hope that our approach will provide insight into breeding patterns and also machine learning.

Information about the Authors:
All three authors are freshmen majoring in computer science.

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Male to Female Student Ratio in STEM-Related Subjects

Gavin Grillo

Departmental Affiliation: Education
College of Arts and Sciences

This research involves looking into the male to female ratio of students in science, technology, engineering, and mathematics (STEM)-related courses. In particular, I will be examining the ratio of male to female students in high school physics classes. The purpose of the research will be to find underlying causes for why male and/or female students may not choose to enroll in STEM-related subjects. The hope then is to find reasons for why students do choose to enroll in these courses. The
Finding Patterns and Rules for Integer Derivatives

Drew Groth, Samantha Frisk, Alexandra Paradine

Departmental Affiliation: Mathematics and Computer Science
College of Arts and Sciences

Finding the derivative of integers is a building block for many mathematical ideas to come. Number derivatives are used to reformulate many big open problems in number theory. We have reduced integers into products of prime numbers to derive a formula for the number derivative of any integer. We began with a few rules such as: the derivative of a prime is 1, the derivative of a composite number, \( (nm) \), is \( n^m \cdot m^n \), and the derivative of 1 is 0. These few rules led to many theorems that we developed to find the number derivative of any integer.

Information about the Authors:
Drew Groth is an actuarial science major from Pewaukee, Wisconsin. He plans to work as an actuary and progress to a CFO position. Samantha Frisk is a junior mathematics major from Pittsburgh, Pennsylvania, and plans to pursue a master's degree in education upon graduation. Lexi Paradine is a freshman mathematics and education major from Fort Wayne, Indiana. She plans to teach high school mathematics after graduation.

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Positive Influences of Being an Active Member of an Online Social Networking Site

Amber Hauser, Erin Moeller

Departmental Affiliation: Social Work
College of Arts and Sciences

In our research, we observed the positive influences of being an active member of a social networking site on the lives of traditional, full-time Valparaiso University students (aged 18-23). We have gathered samples from prevalent, diverse student systems on Valparaiso University’s campus: the populations of the fraternity Phi Mu Alpha, the men’s and women’s Ultimate Frisbee teams, and three social work classes under the direction of Dr. Matthew Ringenberg. Before each survey was administered, we informed each of the groups of the same procedures concerning confidentiality and the application of the surveys to our research. In our research, we addressed the adverse reputation that social networking sites have acquired throughout their existence by extracting evidences of positive reinforcement and influence. We also observed the negatively biased view that consumers are fed from the media regarding online social networking sites. We gave attention to how developments in the ever-growing population of active members of online social networking sites affect our generation and potentially generations to come.

Information about the Authors:
Amber Hauser is a daydreaming, sky-seeking, will-driven, happy individual who has currently found her inner peace with the social work department at VU. She has resided in Kenosha, WI, and finds that location quite comfortable. She hopes to gain some laugh lines and air time after she graduates with a bachelor's degree in social work. Erin Moeller is a junior social work major hailing from various parts of the Midwest and hoping one day to combine social work, Spanish, Ultimate Frisbee, and farming for the greater good of the population. They have both utilized social networking sites to further their connections to the world around them, and they hoped to gain a better understanding thereof through this study.

Faculty Sponsor: Dr. Matthew Ringenberg
Attitudinal and Dispositional Predictors of Environmentally-Responsible Behavior

Anna Isaacson, Ken Knuppel, Ashley Lawrence

Measures of locus of control, optimism, consideration of future consequences of behavior, environmental concern, belief in global warming, biospheric altruism, corporate skepticism, economic motivation, recycling attitudes and motivation, and political ideology were used to predict environmentally-responsible behaviors. Regression analyses revealed that the best predictors were perceived importance of recycling, economic motivation, recycling motivation, and corporate skepticism. These results suggest that global dispositional variables, such as optimism and locus of control, are not particularly useful predictors of environmentally-responsible behaviors. Instead, environmentally-specific dispositions, such as economic motivation and recycling motivation are much better predictors, as well as attitudinal dimensions such as perceived importance of recycling, environmental concern, belief in global warming, corporate skepticism, and political ideology. This suggests that efforts to increase environmentally-responsible behaviors are best directed at impacting environmentally-relevant dispositions and attitudes.

Information about the Authors:
Anna Isaacson is a senior psychology and sociology double major and is in Christ College. She will pursue a Ph.D. in developmental psychology, focusing on adolescent social development, beginning this fall at the University of Missouri. Ken Knuppel is a senior psychology and theology double major. This summer, he will begin the international master’s program at VU, which combines M.S. coursework in international commerce and policy with a 27-month commitment to serving in the Peace Corps in business development. Ashley Lawrence is a senior psychology and humanities double major. Next year, she will be pursuing a Ph.D. in quantitative psychology at the University of Oklahoma.

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Opinions about Anti-Tobacco Marketing Strategies from the Undergraduate Student Perspective

Kara Jachcinski, Meranda Block, Caitlin Berry, Lauren Paczkowski, Emily Bernhard, Nathan Matejczyk

The purpose of this project was to assess undergraduate college students’ opinions of anti-tobacco marketing strategies. The college environment offers an excellent setting for implementation of smoking abstinence interventions for young adults. Freshmen students at Valparaiso University were invited to join group sessions in the residence halls to evaluate anti-tobacco YouTube videos, print materials, and Quit Kit materials. Undergraduate nursing students functioned as group session facilitators. Participants (N = 39) included: 59% males, 87% non-smokers, and 92% who chose to attend for CORE credit. YouTube videos were found to be effective if a dramatic, age appropriate, simple message was connected to tobacco use. Print materials were effective if they included bright colors, brief statistics, few words, humor, and were immediately relevant. Quit Kit materials were selected if they included humor, pictures, had few words, and were useful. Quit Kits items included cozies, chip clips, stress relievers, and cinnamon flavored gum. Ninety-two percent indicated that their opinions about smoking, second-hand smoke exposure, and decisions whether to smoke were affected by these sessions. Data from this study will add to the growing body of evidence about college students’ opinions concerning marketing strategies and form a foundation for a longitudinal study of students’ changing opinions toward smoking.

Information about the Authors:
Kara Jachcinski, Meranda Block, and Caitlin Berry are senior nursing students, Lauren Paczkowski and Emily Bernhard are junior nursing students, and Nathan Matejczyk is a sophomore nursing student.

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Ariel Johnson, Stephanie Kuipers

Departmental Affiliation: Psychology College of Arts and Sciences

This research project was conducted in order to examine student response to our recently devised instrument, the Honor Code Perceptions Scale. A past study investigated students’ perception of the Valparaiso University Honor Code along multiple dimensions, such as Honor Code effectiveness, tendency to engage in cheating behaviors, and toleration of others’ cheating behavior. The current study used additional instruments to measure students’ level of moral reasoning, academic motivation, and socially desirable responding. We assessed each of these variables using, respectively, the Defining Issues Test (DIT), the Patterns of Adaptive Learning Survey (PALS), and the Marlowe-Crowne Social Desirability Scale. Researchers examined relationships among responses to these instruments in order to establish concurrent validity for the Honor Code Perceptions Scale.

Information about the Authors:
Ariel Johnson is a senior psychology and humanities major at Valparaiso University. She currently works as a student library assistant at the Christopher Center for Library and Information Resources. In addition, she is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation. Stephanie Kuipers is a sophomore psychology and biology major with a philosophy minor at Valparaiso University. She is a research assistant in the psychology department. She plans to pursue a service position with AmeriCorps upon graduation.

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Siltation Related to Beaver Dam Decomposition in the Little Kankakee River

McKenzie Kelly, Chris Bitcheno, Alyssa Thacker, Jon Gardow, Arissa Wallis

Departmental Affiliation: Biology College of Arts and Sciences

The Little Kankakee River (LKR) in LaPorte County, Indiana is an uncommon example of a good, cold-water fishery in northwest Indiana. However, the river has variable sedimentation levels; deep silt often covers gravel and sand, smothering invertebrates, a key food source for higher trophic organisms. The LKR contains a naturally-decomposing, abandoned beaver dam. The purpose of this study is to monitor its impact upon upstream and downstream silt levels. This research intends to identify possible sources of variability in silt levels, benefiting restoration teams in determining effects of dam removals. Furthermore, understanding the impact and pattern of silt levels could aid the monitoring of river health. Water depth, silt depth, flow rate, and a description of the river bed are measured and recorded. Flow rate fluctuations will be charted against monthly precipitation, noting changes in flow. It is predicted that the beaver dam causes fluctuating siltation by collecting silt upstream and then releasing variable amounts during dam decomposition. Preliminary results indicate the narrow sections of the river have faster water flow and less silt. The beaver dam impedes flow, widens the river, and reduces velocity, allowing fine sediment to accumulate. It is predicted that if the beaver dam decomposes rapidly, then trapped silt above the dam will percolate rapidly through the system stopping at wide sections of the river. If the beaver dam deteriorates slowly, then silt accumulations may not be measurable and leave silt in the system much longer.

Information about the Authors:
McKenzie Kelly is a senior biology and psychology major with minors in chemistry and Spanish. She is the president of the VU Biology Club and became interested in this project through volunteer work done with the club. Currently, she is planning to pursue a graduate degree in the area of neuroscience. Chris Bitcheno graduated from VU in 2010 with a degree in geoscience. He was one of the original students assigned to the project. Alyssa Thacker is a senior biology and humanities double major. She became involved in the LKR project by working as a student aid for Dr. Davis and participating in stream restorations through the Biology Club. In the future, she hopes to attend Iowa State University's School of Veterinary Medicine. Jonathan Gardow is a senior biology major. He became interested in ecosystem monitoring through Dr. Laurie Eberhardt’s ecology class. After receiving his degree, he plans on going into medical and pharmaceutical sales. Arissa Wallis is a senior biology major with interests in water ecology.
Effects of Chocolate Milk Prior to Exercise

Brian Laipple

Departmental Affiliation: Physical Education
College of Arts and Sciences

Many researchers have studied the effects of chocolate milk on the body after exercise and how it helps aid in the recovery and repair of muscle; but little research has been done on whether chocolate milk is beneficial prior to exercise. For this reason, I will select ten individuals and have them undergo a VO2 max (maximal oxygen consumption) walking test with each person consuming Gatorade, chocolate milk, and water before each separate test. Each test will be conducted with the same diet and amount of sleep the night before to ensure that no outside factors influence the results except for the effects of the substance used. The VO2 max testing equipment will be used to collect data and the data will be analyzed using ANOVA statistical methods. This research will serve to give more insight into the uses of chocolate milk and whether it’s not only beneficial for after exercising, but also before. By also using Gatorade and water, it could be found that chocolate milk is more effective than either of these typical drinks when used before exercising.

Information about the Author:
Brian Laipple is very interested in exercise and helping others achieve their goals, whether they want to lose weight, gain more muscle mass, or become the best athlete they can be. He also played football at Valparaiso and enjoys exercising himself. Due to his interests and doing research on his own, Brian has found a lack of information regarding pre-workout supplementation, especially when it comes to chocolate milk. He will be working with his high school football team’s training this summer and wants to open his own workout facility someday, so this research will aid in the growth of his knowledge in the exercise science field.

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Short Range Sonar Development

Matthew LaRue, Alex McGuffey

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College of Engineering

Our project involves the development of a short-range detection sonar system using Matlab signal processing techniques. Currently, the necessary equipment has been researched and purchased, and the preliminary work on output signal creation, transmission, and reception is being conducted.

Information about the Authors:
Both Matt and Alex are junior electrical engineering students. Interest in the creation of a sonar system started with an internship experience with the Air Force in the area of radar system design.

Faculty Sponsor: Dr. Jeff Will

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Violent and Wintertime Tornadoes in the Central Midwest: A Study of History, Trends, and Climatology

Anthony Lyza

Departmental Affiliation: Geography and Meteorology
College of Arts and Sciences

Tornadoes are among the most widely-feared elements of weather. The central Midwest, a region that, for the purposes of this study, encompasses eastern Iowa, southern Wisconsin, northern and central Illinois, northern and central Indiana, southern Michigan, and northwestern Ohio, is notorious for some of the worst tornado events in recorded history. The purposes of this study are manyfold. The goals are to establish a violent (F4/EF4-F5/EF5) tornado and wintertime tornado climatology for the central Midwest, to search for previously hypothesized patterns in major tornado occurrences, and to determine whether there are links between climate variables and incidences of violent and wintertime tornado occurrences. It has been hypothesized that certain climate indices affect the probability of wintertime tornado occurrences. Data collected on significant tornado occurrences since 1880 by Grazulis (1993) and climate data from the National Oceanic and Atmosphere Administration (NOAA) will be used as the basis of this project. The data from this study establishes the relationships between some of the climate variables and violent and wintertime tornado activity.
Examining Eschatologies of Glory and the Eschatology of the Cross in \textit{A Theology of Hope} and \textit{A Fire in My Belly}

Wendy Mallette

\textit{Departmental Affiliation: Theology College of Arts and Sciences}

This paper utilizes the theological framework developed in Jürgen Moltmann's \textit{A Theology of Hope} to examine David Wojnarowicz's film, \textit{A Fire in My Belly}. Moltmann's work criticizes eschatologies of glory that can be seen when the church emphasizes heavenly salvation at the expense of earthly life. Instead, Moltmann poses the eschatology of the cross that leads the believer to hope for God's transformation of the earth on which the cross stands and sends the believer back to struggle in the world. Using these theological categories, this paper examines Wojnarowicz's film. The footage from \textit{A Fire in My Belly} contains themes of colonization, poverty, HIV/AIDS, church, and sexuality. The film juxtaposes images of poverty, suffering, and silence with images that symbolize wealth, power, and indifference. Through this juxtaposition, Wojnarowicz vividly depicts Moltmann's eschatology of glory. When Moltmann's theology is applied to Wojnarowicz's film, it strengthens the film's critique of society's and the church's silence, exclusion, stigmatization, and maintenance of hierarchical structures. This paper concludes that because Wojnarowicz's film speaks to numerous concrete situations of oppression — of persons living with HIV/AIDS, the poor, queer persons, persons from the two-thirds world, and differently-abled persons — it makes a stronger and more precise critique of the ways in which Moltmann's theological categories operate than Moltmann makes himself and demonstrates how Moltmann's theology, in its failure to speak to earthly suffering, fails to be the eschatology of the cross that Moltmann poses.

Water Quality of Restored Wetlands: A Study of the Great Marsh Complex in the Indiana Dunes National Lakeshore

Wendy Marth, Diandra Obermeyer, Kandice Spera, Pitchaya Patana-Anake, Adam Conner

\textit{Departmental Affiliation: Chemistry College of Arts and Sciences}

Historic wetlands are increasingly being restored for multiple purposes, including improving water quality (WQ). The Great Marsh of the Indiana Dunes National Lakeshore (IDNL) serves as an excellent example of a restored wetland that affects WQ. Fifteen different WQ parameters have been monitored at sites throughout the Great Marsh to assess how the restored wetland is functioning. Data collected thus far indicate WQ in the restored Great Marsh is typical of a northwest Indiana wetland and that the Great Marsh is functioning like a typical wetland in this region. For example, total phosphorus analyses indicate substantial phosphorus uptake by the wetland, E. coli levels generally decrease as water passes through the marsh, and the average conductivity in the wetland is 270 µS/cm. The restored Great Marsh also experiences seasonal changes typical of a wetland, such as fluctuating water temperatures, water levels, and dissolved oxygen levels.

Information about the Author:
Wendy Marth is a senior chemistry major at Valparaiso University and has worked with Dr.
Facebook: Friend or Foe?

Lizz Mook, Cate Valentine

Departmental Affiliation: Social Work
College of Arts and Sciences

Online social networks have been a presence in our society since the first notable sites were developed in 1995 and have now attracted more than 90% of American teens and young adults. This study measures the effect that social networks have on Valparaiso University students’ real life connectivity through social connections and on campus involvement. The study uses a sample of 1994 VU graduates as the control group and current VU students. Through an online survey, participants were asked questions regarding their Facebook and Internet use, their on-campus involvement, and how they saw Facebook being utilized by student organizations. The study is looking at how the amount of time spent on Facebook correlates with students’ involvement in campus organizations, clubs, etc. and also with the amount of leadership positions students are taking within these groups. It also examines how campus groups are using Facebook for the purposes of advertising for events, fundraising, and promoting their own awareness to the student body.

Information about the Author:
Lizz Mook and Cate Valentine are junior social work majors.

Faculty Sponsor: Dr. Matthew Ringenberg

Assessing Nationally Affiliated Student PRSSA Agencies: An Approach to Developing Team Leadership

Alexandria Moulchin

Departmental Affiliation: Communication
College of Arts and Sciences

Nineteen Public Relations Student Society of America (PRSSA) student agencies have met the standards to be recognized as officially affiliated student agencies. Valparaiso University's PRSSA student agency, SPARK, has been nationally recognized since 2009. This means that the Valpo SPARK chapter met professional standards set for nationally recognized student agencies. The study compared and contrasted nineteen nationally affiliated student agencies on the following criteria: 1) student agency infrastructure, 2) team development process, 3) level of client case, and 4) overall leadership elements in the program. Through interviews (e-mail and/or telephone) and analysis of PRSSA and communication websites, the data established a variety of team leadership approaches. The data was examined to identify the key elements in the team leadership profiles. For example, Valpo's agency, SPARK PR, is fully funded by Student Senate. In contrast, most of the other national PRSSA student agencies were not affiliated with their student senate. An examination of this difference indicated the value of student senate affiliation in regard to campus awareness and leadership opportunities.

Information about the Author:
Alex Moulchin is a junior public relations major with a creative writing minor. As a member of PRSSA, she served as the SPARK student agency co-chair in 2010, supervising nine clients. She is now the co-president of the PRSSA chapter. Her leadership includes sponsoring all-campus workshops that train leaders of student organizations in PR. As the public relations coordinator for Student Senate, she coordinates key organizational activities for the Senate organization. She is also a participant in Greek life.

Faculty Sponsor: Dr. Bonita Neff

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A MIP-Based Energy Calibration of the STAR Endcap Electromagnetic Calorimeter for 2009

Zachary R. Nault

Departmental Affiliation: Physics and Astronomy College of Arts and Sciences

The Endcap Electromagnetic Calorimeter (EEMC) is an integral part of the STAR detector at RHIC. The EEMC is used in detecting forward particles from polarized proton interactions, which aid in understanding the spin structure of the proton. In order to properly use the data collected, the energy and position measurements in the EEMC need to be well known. To accomplish this, a calibration of the EEMC was done using minimum ionizing particles (MIPs) for the 2009 run.

Information about the Author: A senior physics major, Zachary has an interest in nuclear physics and high energy physics.

Faculty Sponsor: Dr. Robert Manweiler

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Measuring Radon Gas Flow in a Home

Zachary R. Nault

Departmental Affiliation: Physics and Astronomy College of Arts and Sciences

The primary goal of this research is to measure how radioactive Radon gas flows into a home. Radon is a naturally occurring gas produced in the Earth's crust by Uranium ore. As it moves up toward the surface it can enter homes and places of business through the floor. People can then be exposed to this Radon which can lead to health problems such as lung cancer. For this preliminary study, one house was selected that was previously known to have a Radon gas problem. The house has a Radon Evacuation System that pumps the Radon out of the home where it can safely decay in the air. This system is to be deactivated and the change in the Radon levels monitored. From this data we should be able to better understand how the radon is entering the home and moving within it.

Information about the Author: A senior physics major, Zachary has an interest in nuclear physics and high energy physics.

Faculty Sponsor: Dr. Robert Manweiler

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Correlation of Cosmic Ray Muon Intensity with Atmospheric Conditions

Timothy Olson

Departmental Affiliation: Physics and Astronomy College of Arts and Sciences

Cosmic rays are highly energetic particles which are produced by a variety of interstellar sources. They continually bombard Earth’s upper atmosphere and produce showers of other particles. Such particles contribute a substantial background to many modern physics experiments, so understanding and quantifying the variations in the flux of those particles are important for proper removal of the background from the interesting physics signal. Detection of the (nearly) coincident passage of a particle through a series of scintillators will indicate the direction and energy of cosmic ray muons (a particular type of particle produced in the showers). Correlations between the fluctuations in muon intensity with variations in other parameters, such as local atmospheric pressure, should explain a majority of the fluctuations.

Information about the Author: Tim Olson is a senior physics and mathematics double major. He has worked on research projects in many fields and locations including last summer at the Large Hadron Collider in Switzerland. He will be attending graduate school in physics in the fall.

Faculty Sponsor: Dr. Shirvel Stanislaus

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Relationship between Health Literacy and Educational Materials

Jacqueline O’Reilly, Jennifer Bronnenberg, Brittany O’Reilly, Jennifer Sechrist, Katherine Jankauski, Dr. Carole Pepa, Prof. Constance Lemley

Departmental Affiliation: Nursing College of Nursing
Background: Health education materials are often written at high reading levels, yet low literacy in the U.S. is a problem. The Joint Commission identified the need for understandable materials by health care organizations (HCO). However, literature is unclear about how HCO and beneficiaries identify “understandable.” Purpose: This research study’s purpose was to (a) compare participant preferences in health education materials to their REALM scores, (b) determine if health care providers (HCP) view education materials differently from non-health care providers (NHCP). Methods: Participants recruited at two health fairs, after informed consent, ranked educational materials commonly distributed on perceived usefulness. Reading levels of materials ranged from college to fifth grade. Health literacy was assessed by the REALM; demographic data were also collected. Results: Forty-nine adults participated in the study ranging in ages from 24-82 years. REALM scores ranged from fourth-sixth grade to high school. The majority of HCP and NHCP chose the easy-to-read brochure while the second choice was more diverse. Conclusions/Implications for Practice: Regardless of last grade completed, participants preferred the easy-to-read brochure. HCP choosing materials should use the principles of readability. Materials perceived to be useful may encourage clients to examine materials, improve self-management of disease, and improve outcomes.

Information about the Authors:
Under the direction of Dr. Carole Pepa and Prof. Constance Lemley, the College of Nursing presents Relationship between Health Literacy and Educational Material with senior team leader Jacqueline O'Reilly, senior Jennifer Bronnenberg, sophomores Brittany O'Reilly, Jennifer Sechrist, and Katherine Jankauski. The team has competed at Valparaiso University’s Celebration of Undergraduate Research for three years while also being accepted to the Clarian Research Conference in 2010.

Faculty Sponsor: Dr. Carole Pepa

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Crossing the Border: Improving Therapeutic Relationships between First Generation Mexican Americans and Western Health Providers

Meg Petron

Departmental Affiliation: Nursing/Foreign Languages and Literatures
College of Nursing, College of Arts and Sciences

In health care, the needs of the patient are always first and determine the course of patient care. Due to the strong presence of Mexican Americans in the United States, and consequently the nation’s hospitals, their expectations may be influenced by cultural norms. The aim of this presentation is to give health care providers the information they need to deal with Mexican cultural norms, traditional Mexican folk remedies, and general preexisting notions about Western health care. This information is necessary to create patient-client trust and, subsequently, a therapeutic relationship between patient and practitioner.

Information about the Author:
Meg is a junior nursing major with a Spanish minor. She has spent 10 weeks volunteering at the YMCA in Chile and is currently working the Gloria Dei as a tutor and ESL teacher.

Faculty Sponsor: Dr. Sarah Degner Fields

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What Should Christians Take from the Native American Church Peyote Ceremony?

Brian Rajcok

Departmental Affiliation: Theology
College of Arts and Sciences

Native American religious tradition is a fascinating subject. Yet most Americans know very little about the spiritual practices of indigenous peoples. As a curious student of theology, I explored the modern Native American Church in my senior seminar research paper. I attended a peyote ceremony – a healing ritual using the hallucinogenic cactus peyote – and studied the history, theology, and practice of the Native American Church. Through my research and experience, I have seen similarities between my own Christian tradition and the Native American Church and contend that the sacramental use of peyote can be a powerful spiritual tool in strengthening anyone's relationship with God.

Information about the Author:
Brian Rajcok is a senior theology major at Valparaiso University. He has a great interest in Native American culture and in mystical theology. He hopes to continue similar studies in graduate school. Brian is planning to attend seminary in the fall and may pursue a Ph.D. afterward. Eventually, he hopes to teach theology or be an ordained Lutheran pastor.

Faculty Sponsor: Dr. Richard DeMaris
Predicting Violent Crime

Janelle Ramsel, Ashley Varner, Crystal Sandoval

Departmental Affiliation: Psychology
College of Arts and Sciences

This research works to predict the likelihood that an individual is going to participate in a violent crime. The predictors were taken from several bodies of work and synthesized into a survey format, which can be distributed to the desired population. These measures operate on the hypothesis that certain characteristics increase the likelihood of, but do not predict with certainty, an individual’s propensity to participate in violent crime. The work also serves as a manual for how to interpret the selected data sets as well as how to break down the statistical correlations of each question to their predictive power.

Information about the Authors:
Janelle Ramsel will graduate with her BA in psychology in May 2011. She first became interested in predictors of criminal behavior after her summer internship for the Wisconsin State Public Defender's Office in 2010. Following graduation, she will teach mathematics in Hawaii for two years through Teach for America. Ashley Varner has a BA in psychology and is currently pursuing her master's degree in clinical mental health counseling. Her future goals include becoming a licensed counselor and working with children. She is interested in this body of work because of its predictive power for violent behavior. Crystal Sandoval is a senior psychology major. She is intrigued by research psychology. Crystal is currently employed at Innovations in Learning, where she works as a line therapist for autistic children. She will begin her graduate studies in the fall, focusing on clinical mental health, and then hopes to join the Peace Corps.

Faculty Sponsor: Dr. Jim Nelson

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Religious Affiliation and Its Influence on Attitudes toward Intimate Partner Violence

Christiana Redman, Angela Robertson

Departmental Affiliation: Social Work
College of Arts and Sciences

Intimate partner violence (IPV) has been recognized as a serious social problem since the 1970s. Research has investigated how race, socioeconomic class, and other factors are related to levels of IPV, but little research has been done about how religious beliefs and IPV are related. The few studies that have been done have not been conclusive. Some research has shown a correlation between the amount of religious services attended per week and a decrease in likelihood of perpetrating IPV. In this study, the researchers sought to gain more information on the relationship between IPV and religious affiliation by surveying 100 Valparaiso University students. Participants were asked to complete a questionnaire detailing their religious affiliation, their adherence to their religion’s teachings, and feelings toward different types/severities of intimate partner violence. Respondents were asked about their attitudes toward intimate partner violence, not whether they have been victims or perpetrators of it. A study on the correlation between religious affiliation and intimate partner violence can be extremely helpful to counselors and others working with religious clients and to those working within religious institutions. As part of a university founded on faith, it is especially important that one considers the implications religion has on students’ behavior toward one another. Knowledge that stems from this study can help implement efforts at preventing the social problem of intimate partner violence.

Information about the Authors:
Christiana Redman is a junior social work major with minors in psychology and French. She is originally from Appleton, WI. In the future, she would like to attend graduate school with a focus on youth and family services. She became interested in studying intimate partner violence after spending a semester studying in Namibia, where gender-based violence is common. Angela Robertson is a senior social work major. Angela works for the Office of the Dean in the College of Business. She lives in Valparaiso, IN. Angela became interested in researching how religion affects familial relationships after volunteering with Prevent Child Abuse Porter County.

Faculty Sponsor: Dr. Matthew Ringenberg

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Crisis Management in the Workplace: A Public Relations Perspective

Rochelle Nicole Reinholt

Departmental Affiliation: Communication
College of Arts and Sciences
Over the past few years, America has seen quite a few companies go through great economic turmoil, intense product recalls (Toyota), and several other downfalls affecting different types of businesses everywhere. Companies and organizations have problems every day that do not ever seem to alter business. When a crisis occurs that can threaten the life of a company, the need for a crisis plan is imperative. Many do not realize public relations has a major role in crisis situations. Unfortunately, many businesses have no conception of the difference between a “crisis” and a “problem.” Knowledge of public relations functions can be useful in crisis situations. In a typical scenario, it is the PR professional’s role to make certain the proper statements are given to the public in a prompt, concise manner following a crisis. If the public is underinformed or misinformed, the company’s reputation can be damaged. The strategies of public relations, based on crisis management theories, allows companies to formulate a crisis management plan (CMP). This study surveyed a convenient sample of ten businesses/organizations across Lake and Porter counties. The highest ranking member of the staff was selected as the respondent. The results indicate organizations are not aware of crisis plans. Plus, organizations are not aware of image and reputation theories in communication.

**Information about the Author:**
After several public relations courses, Rochelle Reinhold became interested in the topic of crisis communication. She felt that if more companies used public relations knowledge in times of crisis, the outcome would not be as harsh. Rochelle is currently a senior at VU with an individualized major in organizational communications with a concentration in public relations. She completed her internship through Whiteco Enterprises at Lighthouse Restaurant and Banquets and will continue her career at another Whiteco property after graduation.

**Faculty Sponsor:** Dr. Bonita Neff

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**Tornadic Behavior Related to Land-Falling Tropical Cyclones in the United States**

Jaclyn M. Ritzman, D.S. Arndt, M.C. Kruk

**Departmental Affiliation:** Geography and Meteorology
College of Arts and Sciences

The 2004 and 2005 North Atlantic hurricane seasons were among the most active and economically devastating for the United States, during which 18 tropical cyclones (TCs) made landfall. These TCs were analyzed using the International Best Tracks Archive for Climate Stewardship (IBTrACS) and Local Storm Reports (LSR) datasets to determine whether they produced tornadoes within a preferred quadrant and distance from the center of circulation of the TC. The land-falling TCs were tracked and analyzed through their weakening stages with tornado reports being classified based on the strength of the TC at the time of occurrence. Tornado reports were not included after the TC was classified as extratropical in the IBTrACS dataset. Over half of all tornado reports occurred when the TCs were rated at or below tropical storm strength. As expected, the northeast quadrant was the most dominate area where tornadic activity occurred. In addition, there were three distinct peaks in tornadic activity at distances of 75-100nm, 175-200nm, and 325-375nm from the center of the circulation. Another emphasis of this work used NEXRAD data to determine the best method of identifying potential tornadic storms within land-falling TCs. The most reliable radar product for the three TCs investigated was velocity couplets.

**Information about the Authors:**
Jaclyn Ritzman is a senior meteorology major at Valparaiso University. Research was done through the Ernest F. Hollings Scholarship at the National Climatic Data Center (NCDC) in Asheville, NC. Deke S. Arndt is the chief of the Climate Monitoring Branch at NCDC. Michael C. Kruk works for STG, Inc. in Asheville, NC and is a member of the Coastal Climate Team.

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**Study Buddy Tutoring Program: Partnership Leads to Students’ Academic Success**

Clara Robins

**Departmental Affiliation:** Education
College of Arts and Sciences

The Study Buddy tutoring program places college students with grade-school students who have been identified by their teacher or principal as struggling in school or unsuccessful in passing the ISTEP test. College students work with the grade-school students for one college semester. At Parkview Elementary School, the program has been particularly successful and standardized test scores have risen significantly. This project's purpose is to record and study the
success of the Study Buddy tutoring program at Parkview Elementary both in the classroom and in raising standardized test scores. The research includes both quantitative and qualitative research. The quantitative research is primarily composed of previously collected data (e.g. ISTEP scores) which I have synthesized to examine elements such as the number of students in the program passing the ELA and/or math standardized tests and a comparison of those students’ scores throughout their time in the program. The qualitative research has been conducted via focus sessions with the teachers of Parkview Elementary. The transcripts of these focus sessions will be analyzed for potential reasons for the success of the Study Buddy program at Parkview Elementary. These will be compared to associated research and literature written by professionals in the educational field.

Information about the Author:
Clara Robins is a sophomore middle level education major, with a minor in mathematics and a concentration in science. She has worked in the Study Buddy program as a “buddy.”

Faculty Sponsor: Dr. Del Gillispie

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An Observational Study of Variable Stars
Joel Rogers, Wesley Cheek

Departmental Affiliation: Physics and Astronomy
College of Arts and Sciences

This past summer, we carried out an observational study of light variability in approximately 20 stars. Our goal was to document their changes in brightness, determine a period of the variability, and investigate whether their brightness changes were correlated with changes in color (and thus temperature). These stars are part of a special class of stars that have evolved beyond the red giant phase but have not yet become white dwarfs. Little is known about their variability during this phase. We observed them on almost every clear night during the summer of 2010. We then compared the data for this summer with that of the previous two years. We determined tentative periods for roughly half of these, and they ranged from approximately 40 to 200 days. The brightness changes ranged from 10 to 40% and the objects in general were redder and cooler when fainter. The variation in brightness is due to pulsation of the stars.

Information about the Authors:
Astronomy has always been of great interest to Joel Rogers and Wesley Cheek due to the extraordinary wonders of the universe. Being another branch of physics, astronomy provides a further education on a much larger scale. The objects they observed over the summer were not discussed in Astronomy 101, so it was interesting and beneficial to get a “hands on” experience with material not covered in class. Currently, they observe objects on clear nights as they did in the summer. Future goals include continuing to observe these objects on clear nights throughout the school year and possibly pursuing further research during another summer.

Faculty Sponsors: Dr. Bruce Hrivnak, Mr. Wen Lu

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The Effect of Strong Electrostatic and Magnetostatic Fields on the Activity of Radioactive Nuclides
Samuel Schaub

Departmental Affiliation: Physics and Astronomy
College of Arts and Sciences

This experiment seeks to measure the effect of strong electrostatic and magnetostatic fields on the decay constant of short-lived radioactive isotopes. Though it is assumed in modern radioactivity theory that such fields should not have any measurable effect, conclusive evidence utilizing modern equipment is absent from published literature. Samples have been monitored that exhibit beta-minus, beta-plus, electron capture, and internal conversion modes of radioactive decay. Radioactive nuclides chosen for this study include I-128, Cs-134, and Cu-64. The half-lives in this collection of radioactive nuclides range from 25 minutes to 12.7 hours. Sodium Iodide detectors are used to monitor the samples both before and after they are placed in a strong static electric or magnetic field. Electric fields used in this study are about 20kV/cm and magnetic fields are inhomogeneous between 4.5kGauss and 7.5kGauss. From the data collected, the half-life of the sample during the time in the field is calculated, and this is compared to the normal half-life in the absence of strong electric or magnetic fields. This experiment is looking for very small deviations in the half-lives that escaped detection in earlier experiments that used cruder equipment.

Information about the Author:
Samuel Schaub is a senior physics and chemistry major. Next fall, he will begin pursuing a Ph.D. in
University Observatory, using the 0.4 meter telescope and an electronic camera to take digital images. I reduced these data using an image processing program to get the numerical data results. I plotted these results as a light curve showing the variation in brightness of the star versus time. By observing in three different filters, I also searched for variations in color to see if the change in color was correlated to the change in brightness (i.e., the star is hotter when brighter, cooler when dimmer, etc.). This is a long-term study and, in addition to my observations, there are 14 years of previous data on these objects. In the poster, I present the results of all the data for these two PPNe. They have periods of 114 days and 101 days, with a correlation between brightness and color; both show a cyclical variation in brightness with amplitude varying from year to year.

Information about the Author:
Kristie Shaw is a junior in the Physics and Astronomy Department with a double major in astrophysics and mathematics. She has been a part of this research project for two years now, and Kristie and Dr. Hrivnak have plans to publish a paper on the results. After completing her undergraduate degree, Kristie plans to get her doctorate in astrophysics and then go into a research field of astronomy, preferably at NASA.

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Examination of Social Responding in Children with Autism Spectrum Disorder

Micah Shields, Carlton Lyons

Departmental Affiliation: Psychology
College of Arts and Sciences

Impairments in reciprocal pretend play are well documented in children with a diagnosis of Autism Spectrum Disorder (ASD). The play of children with this disorder is characterized by repetitive behaviors and lack of symbolic or social quality. This disorder is also characterized by deficits in spontaneous language, imitation, and social interaction. The effectiveness of many different behavioral teaching techniques has been examined in order to teach play skills to children with autism. Research supports the viability of these different interventions, but very few studies have directly compared the effectiveness of these different interventions. The current study provided a direct comparison of two popular social interventions. Researchers first explored the video modeling technique and then examined the adult
prompting and reinforcement technique. A control group where children participated in a structured play session with no direct intervention was also included. Children were placed in the different conditions using random assignment. Researchers predicted that children who were trained using the video modeling technique would demonstrate a greater number of social responses. Ultimately, researchers plan to generalize the results beyond the research setting to other situations in the child’s natural environment.

Information about the Authors:
Micah Shields is a senior psychology major at Valparaiso University. He is planning on pursuing clinical psychology graduate studies. He is a teaching assistant in the Department of Psychology and a member of Psi Chi and Mortar Board. Carlton Lyons is a senior double major in psychology and biology. He is planning to pursue graduate studies in cognitive neuroscience.

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Discrimination vs. Acceptance of Homosexuality at Valparaiso University
Jennifer Johnson, Britney Smiejek, Jennifer Pokorny

Departmental Affiliation: Social Work
College of Arts and Sciences

Views of homosexuality have been a major issue for many years and still are to this day. As stated in the Declaration of Independence, all citizens should be granted equal rights and respect. However, many still are struggling to offer their acceptance to those of diverse populations, especially to those who identify themselves as members of the GLBTQ community. This lack of equality has escalated to a nation full of discriminating views, attitudes, and stereotypes. While all ages have portrayed negative attitudes towards members of the GLBTQ population, it is most visually prevalent among students at college campuses. Because of the prevalence in college, this study was targeted towards students of both heterosexual and homosexual orientation at Valparaiso University. The study was generated in order to obtain varying perspectives on the topic of homosexuality. With the knowledge gleaned, results were expected that there is not an overall acceptance of the homosexual population as there is for the heterosexual population on the Valparaiso University campus. With or without an overall accepting population, it is imperative that the homosexual community be treated with integrity and respect.

Information about the Authors:
Britney, Jen, and Jenny are junior social work students attending Valparaiso University. They are striving to better our campus and community and hope that this research will work towards this goal.

Faculty Sponsor: Dr. Matthew Ringenberg
Student Contact: britney.smiejek@valpo.edu

Effects of Caffeine on Maximum Bench Press Repetitions
Alex Soller

Departmental Affiliation: Physical Education
College of Arts and Sciences

The purpose of this research is to study the effects of caffeine on the maximum amount bench press repetitions performed. Blood pressure and heart rate will also be measured. This research is important because of the popular use of caffeine among college athletes in today's society and proving or disproving the benefits could be of great importance to athletes at our university.

Information about the Author:
Alex Soller has used caffeine supplements prior to athletic competition and is curious to research the effects that it has on the body. He plans on using this in his future career as a strength coach and personal trainer and will be able to inform his clients about this information.

Faculty Sponsor: Dr. Kelly Helm
Student Contact: alex.soller@valpo.edu

Comparison of Public Relations and News Professionals’ Usage of Social Media in Communication Relationships
Kathy Stalbaum

Departmental Affiliation: Communication
College of Arts and Sciences

Professionals in the areas of public relations and news adopt social media extensively in their respective disciplines. Thus the focus of this study is to ascertain how social media was used in professional communication. A questionnaire sent to both journalists and public relations practitioners was
determined through various methods. The final analysis emphasized the respondents' identification of the strengths of social media for professional reasons. This questionnaire (Likert Scale) stressed postmodern perspectives through the use of ethical dimensions as integrated by the views of respondents. For the news media, regardless of age, e-mail was preferred and these reporters did not integrate Facebook into communication. The public relations practitioners' preferences were split more evenly by age with those under 45 preferring social media.

Information about the Author:
Kathy Stalbaum is a junior new media journalism major. Kathy is a non-traditional student. She resides in Union Mills, Indiana. Kathy’s goal for the future is to write for a local newspaper. Social media has opened up a whole new area of communication and information processing that was not available a few years ago. She wanted to find out how professionals in the news media and public relations fields currently made use of social media.

Faculty Sponsor: Dr. Bonita Neff
Student Contact: kathy.stalbaum@valpo.edu

Accelerating Quantum Computer Simulation via Parallel Eigenvector Computation
Karl Stathakis

Departmental Affiliation: Mechanical Engineering College of Engineering

Quantum-dot cellular automata (QDCA) hold great potential to produce the next generation of computer hardware, but their development is hindered by computationally intensive simulations. Our research therefore focuses on rewriting one such simulation to run parallel calculations on a graphics processing unit (GPU). We have decreased execution time from 33 hours 11 minutes to 1 hour 39 minutes, but current progress has shown that further gains are possible. The calculation of eigenvectors holds particular promise for acceleration. Our research has two components: testing MATLAB’s algorithm for these calculations and creating a C-based algorithm to improve on MATLAB’s execution time. MATLAB requires 0.2352 +/- 0.0074 seconds to execute this function, while our function requires 0.0674 +/- 0.0143 seconds. Further, our function’s iterative and many-threaded nature makes it ideal for parallel implementation in the CUDA language, which is expected to further increase execution speed. At the time of this writing, implementation is ongoing. Our presentation shall focus on our functions’ efficiency increases over their MATLAB counterparts, and the application of GPUs’ immense computational power to QDCA device simulation.

Information about the Author:
Karl Stathakis is a senior mechanical engineering student with a strong interest in computational algorithms and programming experience in C, MATLAB, and CUDA. After graduation, he hopes to follow this interest in graduate school by simulating the thermodynamics of chemically reacting fluid flows.

Faculty Sponsor: Dr. Jeff Will
Student Contact: karl.stathakis@gmail.com

The Structure and Activity of Nickel Oxide Clusters in Oxidation Catalysis
Dane Stewart

Departmental Affiliation: Physics and Astronomy College of Arts and Sciences
Small clusters of transition metal atoms have been found to have unique and potentially useful catalytic properties. Using a gradient-corrected density functional method, we computed the structure of a four atom nickel cluster at its lowest energy state. The Ni₄ cluster was allowed to interact with O₂ and gained two oxygen atoms. The Ni₄O₂ cluster was then put into a variety of different configurations and optimized to determine the most stable structures for several different multiplicities. Vibrational frequencies were also calculated to ensure that the structure was stable. The stable structures are then modeled on a diamond support to model the final shape for use in catalysis.

Information about the Author:
Dane Stewart is a sophomore physics major from Valparaiso, Indiana. After completing his degree at VU, he plans on attending grad school to pursue a Ph.D. with an emphasis in surface physics.

Faculty Sponsor: Dr. Stan Zygmunt
Student Contact: dane.stewart@valpo.edu
Don’t Let Silence Take another Life: A PR Campaign to Raise Carbon Monoxide Awareness

Kristyn Rein, Jessie Strauch, Ali Aljaziri, Jennifer Serketich

Departmental Affiliation: Communication
College of Arts and Sciences

The campaign goal was designed to inform and educate the community about the risks of carbon monoxide. The objectives for a national campaign focused on raising general awareness, promoting the First Alert detectors, and rallying people around the carbon monoxide cause. To implement these objectives, key communication strategies were identified: broadcasts, parenting magazines, fire departments, hospitals, and social media. The primary strategy is to execute a communication campaign around an awareness month. Such an approach will involve fire departments, broadcasts, parenting magazines, a logo and slogan – “Don’t Let Silence Take another Life” – to represent the carbon monoxide campaign. A national approach targets the top 20 cities in the United States where the awareness month campaign will be promoted. After researching several of the most popular news broadcasts on the major networks on television, and the appropriate way to share information through social media sites, the national awareness month presented a way to gain additional awareness for carbon monoxide and its potential dangers. This public relations campaign will be evaluated through sales during the awareness month, comments on social media sites, viewership of the talk shows and news shows, response from parenting magazine readers, and a survey of fire departments.

Information about the Authors:
The authors learned about this project through Wheatley and Timmons, a Chicago public relations agency, and decided to formulate a public relations campaign around carbon monoxide awareness. Ali Aljaziri, a senior public relations major, received a scholarship from the government of Saudi Arabia to study in the United States at Valpo. Ali is very active in VISA (Valparaiso International Student Association) and shares his valuable international perspective with students at various promotional events around campus. Jessie Strauch is a junior public relations major (business minor) and is actively involved in many campus organizations, including PRSSA, and Chi Omega Sorority. She is also employed by the IMC Student Division (Promotions Team). Kristyn Rein is a senior public relations major with a public and corporate communication minor, and also participates in various organizations on campus, currently serving as the president of AWC (Association for Women in Communication). Jennifer Serketich is a senior public relations major and TV-radio minor.

Faculty Sponsor: Dr. Bonita Neff
Student Contact: jessie.strauch@valpo.edu

Isolating and Sequencing Genes Coding for Metal-Reducing Enzymes in Shewanella algae, BrY

Diana Stutzman, Thaomy Nguyen, Emily Brenan

Departmental Affiliation: Chemistry
College of Arts and Sciences

The Natural and Accelerated Bioremediation Research (NABIR) Program focuses on efficiently managing and reducing contamination of soil and groundwater by heavy metals and nuclear materials at Department of Energy (DOE) sites across the United States. In an effort to learn how to use microbes to accomplish this goal, four genes that code for metal-reducing enzymes expressed by the soil bacterium Shewanella algae, strain BrY are being sequenced. Polymerase Chain Reaction (PCR) is used to amplify the genes of interest, and the PCR products are purified by cloning and sent to the University of Chicago for sequencing. So far, partial sequences of two genes have been obtained. Once the complete sequences of all four genes have been obtained, the research will focus on the characterization of the metal-reducing enzymes themselves.

Information about the Authors:
Diana Stutzman is a senior biochemistry major, and a creative writing and human biology minor. She became interested in the project through conversations with Dr. Goyne and an interest in microbiology. She will graduate next year and go on to obtain a Ph.D. with hopes of doing medical research. Thaomy Nguyen is a junior biology and chemistry double major. Emily Brenan is a junior biology and chemistry double major.

Faculty Sponsor: Dr. Thomas Goyne
Student Contact: dianakstutzman@gmail.com

The Message and the Situation: An Evaluation of the Preaching of Paul Tillich

Benjamin Taylor

Departmental Affiliation: Theology
College of Arts and Sciences
In much of Western Christianity, there exists a problem of identity for the Christian individual. The individual considers him or herself a Christian, but feels a matter of disconnect between who he or she is on Saturday night and who he or she is on Sunday morning. The Christian struggles to live a life in both the sacred and the secular. The Christian struggles to establish an authentic identity, an identity that incorporates all of the human experience. How can this struggle be resolved? Paul Tillich had an answer. Tillich developed his method of correlation as a way of uniting the individual’s deepest meaningful questions about life with the message of the Gospel: Jesus Christ as the New Being. Tillich believed there was not a separation between the Saturday night and Sunday morning Christian, between the secular and the sacred. He advocated a theological method that used secular culture – music, art, philosophy – as a means of demonstrating the omnipresence of God within human existence. Further, he used this concept in his preaching of the Gospel. This study shows how he used representations of secular culture in three of his homilies.

Information about the Author: Benjamin Taylor is a senior theology major. He became interested in the theology of Paul Tillich last summer and has not been able to stop reading Tillich since. After graduation from Valparaiso University, he plans to pursue graduate study in theology at a divinity school. His dream is to one day become a professor of theology so he can talk about God and the meaning of life every day for the rest of his life.

Faculty Sponsor: Dr. Lisa Driver

Student Contact: ben.taylor@valpo.edu

Comparison of Bioelectrical Impedance Analysis Instruments and Skinfold Calipers in the Determination of Percent Body Fat in Division I Tennis Players

Michael Woodson

Departmental Affiliation: Physical Education College of Arts and Sciences

Body composition, specifically percent body fat, is an important measurement performed in both the clinical and educational settings. Very reliable and accurate systems for measuring body composition are available for use, but they are time-consuming and very expensive, such as dual x-ray absorptiometry and hydrostatic weighing. Attempting to find technology that is inexpensive and easy to operate in determining body composition is a difficult task. However, bioelectrical impedance analysis machines offer the possibility of fulfilling this need in the educational and clinical settings. The question that needs to be answered is whether the bioelectrical impedance analyzers are a reliable and accurate tool in determining body composition in the clinical or educational setting. In this research, there will be three different trial sessions. Each session will consist of four different body composition tests. The results of these tests will be analyzed using Pearson’s r correlation to show statistical significance between trials and instruments.

Information about the Author: Michael Woodson is a triple major in biology, chemistry, and exercise science with a minor in human biology. He is also on the tennis team at Valparaiso. His interest in the topic stemmed from work with body composition machines in the Exercise Prescription course.

Faculty Sponsor: Dr. Kelly Helm

Student Contact: tracy.woodson1@valpo.edu

Testing the Potential of Using Fungi to Convert Human Waste into Protein

Alex Zapata, Elizabeth Phillippi, Blair Mitchell, Jon Schoer, Michael Watters

Departmental Affiliation: Chemistry and Biology College of Arts and Sciences

We report on the results of a pilot experiment designed to test the potential of filamentous fungi (mold) to reduce solid waste (feces) while converting it into a consumable, high protein food product. Feces represent an untapped resource. Filamentous fungi are natural decomposers with the ability to use this resource. Many filamentous fungi are safe to eat. We examined growth in order to determine the conditions which maximized the rate of conversion of solid waste into fungal biomass. For this pilot, we compared the effect of different lengths of incubation, different methods of aeration, and different available surface area. The initial study resulted in rates of conversion as high as 75% (3.75g of mold produced from 5g of solid waste). Fungal growth also appeared to reduce odor. Although initially proposed as a mechanism to deal with waste and food storage issues on long-term space missions, this project holds the potential to benefit waste processing in diverse situations including large livestock confinement operations and sewage treatment facilities. This work was supported by a
grant from the Indiana Space Grant Consortium (INSGC).

Information about the Authors:
Alex is a senior pursuing a major in biology as well as minors in chemistry and philosophy. He began his research under Dr. Watters in the fall of 2010 studying the effects of oxidants and reductants on the branching density in Neurospora crassa. After graduation, he hopes to pursue an MD/PhD in soft tissue engineering. Elizabeth Philipp is a sophomore chemistry and biology double major from Green Bay, Wisconsin. She enjoys researching, reading, and playing her violin. She hopes to one day attend graduate school and research algae-based biofuels. Blair is a senior pursuing a bachelor’s degree in biology with a minor in chemistry. This is her first research project with Valparaiso faculty. Following graduation, she plans to attend medical school, seeking a dual MD/MPh degree with a special interest in women’s health.

Faculty Sponsor: Dr. Jon Schoer, Dr. Michael Watters

Student Contact: michael.watters@valpo.edu

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Beyond the Volcanoes: A Community Partnership for Health in Rural Nicaragua

Chelsea Zeman, Cathy Wingstrom

Departmental Affiliation: Nursing
College of Nursing

Background: Health inequities related to gender, ethnicity, socioeconomic status, and geography exist in rural Nicaragua due in part to lack of access to health services. The purpose of this ongoing project is to improve health equity in rural Nicaragua through social transformation using community-based participatory action research. Bronfenbrenner’s ecological model of human development, school health, and primary health care theories provided the framework for this research. Methods: Community-based participatory action research involves six phases: partnership, assessment, planning, implementation, evaluation, and dissemination. In the implementation phase, the goal was to build stoves that would remove smoke from the homes and in turn improve the respiratory health of the community. Members of the community were chosen to receive stoves through a raffle. The supplies for the stoves were divided among those chosen. Families worked with a local mason to assemble their stoves. Data on respiratory health were collected from the members in the community receiving the stoves to serve as a baseline for future evaluation of the project. Results: The community worked with the research team and the local mason to assemble stoves with chimneys to improve respiratory health. Baseline data will be analyzed and presented. Conclusions: By partnering with the community, the researchers were able to implement a project of importance to the community to help meet the community members’ health-related goals.

Information about the Authors:
Chelsea Zeman is a junior nursing major and Cathy Wingstrom is a sophomore nursing major. Neither student had any experience with this problem prior to joining the research team, but both were very interested in it. Since both are pursuing careers in nursing, this opportunity is a great way to expand their knowledge of the nursing role in a holistic sense.

Faculty Sponsor: Dr. Amy Cory

Student Contact: chelsea.zeman@valpo.edu
### Creative Work and Research Committee Student Undergraduate Research Grants

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ADDITIONAL UNDERGRADUATE EXHIBITS AND AWARDS

College of Engineering Design Expo
Saturday, April 30, 2011
10:00 a.m. – 1:00 p.m.
Gellersen Center

Department of Art
Student Art Exhibition
April 20 – May 8, 2011
Brauer Museum of Art
Opening Reception, April 20 – 7:00 p.m., VUCA Lobby
Works selected by VU studio art faculty

Christ College Student Scholarship Symposium

January 27, 2011
Debunking the Myths of Masculinity: George Eliot’s Critique of Victorian Masculinities via Edward Casaubon of Middlemarch
By Jazmine Reyes, sophomore

Kolleena Ensan: Samira Said’s Music as an Interpretation of Moroccan Women’s Cultural Identity
By Halina Hopkins, sophomore

September 16, 2010
Redeeming the Underground Man: Writing as a Vehicle of Redemption in Dostoevsky’s Notes from the Underground
By Ciara Reyes, senior

The Changing of Chinese Medicine: Interlacing TCM with Western Politics
By Krista Schaefer, junior

Supporters of Valparaiso University’s Undergraduate Scholarship
The Valparaiso University Guild
Office of the Provost
Committee for Creative Work and Research
Teaching Resource Center
Thanks to all who participated in the planning of this event.
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