

2005 ABSTRACTS

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Keynote Presentation

Because Life Is Not Multiple Choice Dr. Wendy Pirie College of Business Administration

Wendy Pirie is an Associate Professor of Finance at VU. Before coming to VU in 1997, she taught at a broad range of institutions - large public universities; small, private, religiously affiliated colleges; and a military academy.

She received her Ph.D. in Finance and Accounting from Queen's University at Kingston in 1995. Earlier she completed MBA degrees in Finance, and Marketing and Distribution Systems from Universities of Toronto and Calgary respectively.

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Her undergraduate degrees are in accounting and economics. A Chartered Accountant, she worked at Deloitte and Touche for five years.

Dr. Pirie's research interests include microstructure issues in finance and issues in business education, curriculum design, assessment, and pedagogical approaches. She has published in Journal of Financial Research, Journal of Economics and Finance, Managerial Finance, and Educational Innovation in Economics and Business. She has presented at numerous conferences including those of American Finance Association, Financial Management Association, Multinational Financial Issues Association, and Decision Sciences Institute. She has presented at numerous AACSB seminars and symposia including the Undergraduate Program Seminar and the AACSB Continuous Improvement Symposium.

Currently, Prof. Pirie is teaching finance courses and an introductory business course at VU. However, in the past, she has taught accounting (financial, managerial and intermediate), business law, international taxation, management, marketing, policy and strategy, and statistics. She has taught both mature and traditional students at the undergraduate and graduate levels. It is her varied experience academically (as a student and professor) and professionally that creates her desire to mentor students both in and out of the classroom. Research projects conducted by her students have been presented at VU, Butler, and NCUR.

Introduction to the Celebration

The Valparaiso University Celebration of Undergraduate Scholarship is a conference that allows undergraduate students to showcase their creative and/or scholarly work and research in a professional format. The Celebration began as the idea of an interdisciplinary group of faculty who attended several national meetings on the role of research in the undergraduate experience of college students. Several universities and national groups currently offer conferences for undergraduate students to present research, and it was felt that there should be an opportunity for VU students to share this work with the campus community. Students who have worked on high quality class projects, senior projects and theses, or independent scholarship are encouraged to participate. Projects completed or near completion in the Fall Term would be excellent choices for presentation at the Celebration. Spring Term projects are also welcome as long as they are close to completion. Every faculty-sponsored project that is submitted will be accepted for a poster presentation. The Dean of each of the five colleges is invited to select one student's submission to represent that college at the Dean's Choice Presentations. Representing the best of each of the five colleges, these students share their work in oral presentations as part of an evening program. The program also includes an opening address by a faculty member who has actively involved students in his or her research program.

The Valpo CORE Reader Jim Beasley, Editor Valpo CORE Reader features some of the best writing done from the previous year, highlights models of the kinds of writing students will be doing in the current year, and perhaps most importantly, invites additional ways of thinking about our texts. The idea of research is closely related to one of the best aspects of a portfolio writing course--its emphasis on revision. Revision, like research, implies work over time, and most of time, "seeing again" and "searching again" takes place through dialogues

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with others. One of the larger papers which involves both re-researching and re-visioning is the "worker profile," an ambitious paper in the second semester involving interviews and contextual framing. You might notice that many of these essays address the idea of vocation or calling in the lives of the authors or their subjects. It is intentional. We have been given permission to devote some serious thinking about the spiritual world of vocation and how first year students think about their place in that world. We are grateful to participate in the Celebration of Undergraduate Scholarship. Contributing Authors: Alison Bahr, Elizabeth Banda, Laura Bohlmann, Angie Cook, Dana Dobosz, Will Hartwell, Lauren Kaptur, Tom Kolzow, Tim Schiappacasse, Luke Schroeder, Kristine Sorensen, Diane Zuber Absolute Word, Adiaphoric Image: A Lutheran Critique of Kant and Lyotard on the Sublime Karl Aho Departmental Affiliation: Christ College, College of Christ College Jean-Francois Lyotard believes that contemporary artistic representation finds its impetus and axioms in the aesthetics of the sublime. But whose aesthetics and which sublimity ought we pursue? Kant's Critique of Judgement and Lyotard's own What is Postmodernism? base their aesthetics on antithetical concepts of the sublime. Choosing between these contradictory Enlightenment and contemporary conceptions of the sublime without resorting to some outside criteria is impossible, and Lyotard's critique of the Kantian sublime leaves no room for alternative sublimities. Martin Luther's instructive rejection of Reformation-era iconoclasm provides one such criterion by making representation primarily an ethical concern. He provides an orientation to the ethical production and use of images that conform to the absolute Word, yet are regulated by relative and contingent communities. By returning the freedom to determine what to do with these adiaphoric yet essential images to specific communities, Luther gives Christians and others a framework for evaluating later responses to representation. Applying Luther's representation reorientation both reveals the flaws in Lyotard's and Kant's postmodern aesthetics of the sublime while still allowing today's Christians to use either paradigm according to their needs. Information about the Authors: Karl Aho comes from the Upper Peninsula of Michigan, and likes reading and writing, but not arithmetic. He is a "Magellan Studies" major in his fourth semester in the program. Faculty Sponsor: Scott Huelin Student Contact: karl.aho@valpo.edu How Similar are the Pain Intensity Ratings between Children Experiencing Pain and their Parents? Amanda Allen, Jennifer Biller, Stephanie Brown, Adam Hudak, Danielle Nadeker, and Katherine Schryner Departmental Affiliation: Nursing, College of Nursing Pain is what the patient says it is, but how does one determine pain in infants and young children who lack the ability to fully describe it? The purpose of the research was to determine if there is a correlation between pain intensity ratings of children and their parents, and to determine an assessment technique for effective pain management that will provide a valid rating from both parents and children. Searches of CINAHL and Academic Search Elite were conducted, and seven articles were chosen for the review based on selected criteria. Samples of the studies consisted of children, their parents, and their nurses. Studies using qualitative, descriptive methods with convenience samples yielded more accurate results. Measurements included multiple assessment techniques such as the OUCHER scale, verbal interviews, and questionnaires. Research findings indicate that parents and children rate pain similarly; however, nurses and children rate pain differently. To change nursing practice, a policy was devised for pain assessment using the University of Wisconsin Children's Hospital Pain Scale (UWCH) scale for pre-verbal children

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and the OUCHER or Visual Analogue (VAS) for school age children. Information about the Authors: This nursing research utilization group is composed of traditional and accelerated senior students from the College of Nursing. We are committed to excellence in our field and strive to reach better health outcomes by focusing on the community, family, and individual by utilizing evidence-based practice. Faculty Sponsor: Nola Schmidt Student Contact: Danielle.Nadeker@valpo.edu

Fumbles and Recoveries: A Look at the Role of Public Relations in Sports Image Restoration
Laura Arloszynski, Zach Golden, Cassidy Kuhlmann
Departmental Affiliation: Communications/Public Relations, College of Arts and Sciences
Public relations use of tactics and strategies is crucial in developing and maintaining the positive images of sports figures. Many sports figures find themselves in controversial image-threatening situations, and public relations is often responsible for repairing the damage. Maintaining a positive image in such situations is highly dependent on PR's expertise. Some of the theoretical hypotheses keeping to provide insight into this area of study include; Image Restoration Theory, Labeling Theory and Looking Glass Theory. In this study in particular, a survey of students and adults indicated the perceptions towards this topic varied according to education, gender, age and involvement in media consumption. The results indicated that sports figures, in the National Football League specifically, do depend on public relations efforts to preserve positive images and reputations among audiences.

Information about the Authors: The role of public relations is creating a sport's image necessitates a variety of strategic public relations approaches. Image restoration after a crisis may cause public relations to assume a more direct role in handling the public's response, for example. Other public relations strategies depend on the needs and the context the sport's figure represents. The power of communication to mold and change an image fascinates our research team which includes: Laura Arloszynski, a sophomore Public Relations and Art History double major who wants to work in PR for an art gallery; Zach Golden, a junior PR and Japanese double major who wishes to work internationally for a PR firm in Japan; and Cassidy Kuhlmann, a senior Television/Radio major minoring in PR. Faculty Sponsor: Bonita Neff Student Contact: Zach.Golden@valpo.edu

Developmental Prescreening of High-Risk Infants and Prediction for Outcome
Brandon S. Aylward
Departmental Affiliation: Psychology, College of Arts and Sciences
Objectives: To determine if a caretaker-completed neurodevelopmental prescreening questionnaire yields an acceptable rate of agreement with a comparable hands-on screener in infants at biologic risk, and to identify factors that influence agreement. Furthermore, factor scores of medical complications and prediction for outcome was assessed. Design: Prospective, mixed longitudinal/cross-sectional study. Setting: Five, university-affiliated screening/follow-up clinics. Participants: Of a total sample of 1133 infants, 352 were evaluated at 6-months, 332 at 12-months, and 196 at 24-months; 54% male, 34% African-American, 63% White, 3% "other." M gestational age=31.57 (5.16) weeks, M birth weight=1602 g. (988), M days of hospitalization= 44.67 (34); 79% were < 2500 g. Measurements/Main Results: Caretakers completed a Neurodevelopmental Prescreening Questionnaire (NPQ; 11-13 items) while viewing a video. The Bayley Infant Neurodevelopmental Screener (BINS) was then administered by examiners blinded to NPQ scoring. BINS items were scored optimal (1)/nonoptimal (0) and scores were summed to indicate risk status; NPQ was scored on 1-5 Likert scale (4 & 5 were optimal).

Information about the Authors: Brandon Aylward is a senior psychology major. He plans on pursuing graduate study in Clinical child/pediatric psychology. Faculty

Office of Sponsored and Undergraduate Research - Valparaiso University
Sponsor: Jim Nelson Student Contact: Brandon.Aylward@valpo.edu Citizens Views of the Quality of Life in Valparaiso Adam Bautista, Christopher Buckley, Marty DeNicolo, Donna Garchie, Tom Mathews, Elly Schroeder Departmental Affiliation: Community Research and Service Center, College of Arts and Sciences The purpose of this project is to assess citizen perceptions of the quality of life in the City of Valparaiso. The study reports the results of a survey distributed to over 2400 households in the City where respondents are asked to report their perceptions of issues related to business and economic development, transportation, and the overall quality of life. They also are asked to evaluate numerous City services ranging from police and fire protection to the schools. In addition residents are asked what they like most about the City, what are its major problems and what they would be willing to pay more taxes for. A detailed analysis is also made of what citizens consider to be the major areas of the city with traffic problems. All of the results are then compared to how citizens responded to many of the same questions three years ago. Information about the Authors: Adam Bautista, Senior philosophy and political science major Chrstopher Buckley, Senior political science major Marty DeNicolo, Sophomore political science major Donna Garchie, Senior History major Tom Mathews, Senior political science major Elly Schroeder, Senior sociology and International Service Major Faculty Sponsor Larry Baas Student Contact: Donna.Garchie@Valpo.edu Public Relations and Fundraising Unite: Maximizing Fundraising Success with Strategic Public Relations

Sarah Benczik, Jeff Borchardt

Departmental Affiliation: Public Relations, College of Arts and Sciences

Despite the current tight economy in the United States, non-profit organizations must still find and secure corporate funding. As corporations continue to cut back on philanthropic spending, organizations dependent upon this corporate funding are forced to find new and effective ways of convincing companies to invest in special and humanitarian causes. What do, and what can, non-profit organizations do to boost their fundraising success? How do they build and maintain the necessary non-profit/investor relationships? Many non-profits focus solely on fundraising, but is this the best and most effective solution to securing corporate funding? Based on comparative analysis of fundraising campaigns among various non-profit organizations, a series of interviews with fundraising directors and public relations practitioners, and a comprehensive survey, our research shows that fundraising success depends on more than creative fundraising campaigns: successful fundraising is based on good relationships. These good relationships are established through public relations strategies, practices, and synergies. Our research consistently demonstrates that a union between fundraising and public relations yields the most successful fundraising results for non-profit organizations. As the field of public relations continues to evolve and expand, it seems that it will also reach into and transform traditional fundraising.

Information about the Authors: Sarah Benczik is a sophomore Public Relations, International Affairs, and Humanities major from Plymouth, Indiana. She is currently the public relations coordinator for Indiana Destination ImagiNation- an international non-profit creative problem solving competition. Sarah recognized the necessary union between public relations and fundraising for Destination Imagination, and wished further to discover useful successful tactics for non-profit in fundraising.

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Sarah intends to pursue graduate work and a Law degree upon graduating in May 2007.

Jeff Borchardt is a senior Public Relations major. He is currently a member of PRSSA, as well as the social chair for the Sigma Chi Fraternity. After a summer internship, Jeff realizes the importance for non-profit fundraising. Jeff is excited to explore the synergies between public relations and fundraising, and its overall effect on the success of campaigns. Jeff intends to graduate this spring. Following graduation, he plans to pursue a career in fundraising.

Faculty Sponsor: Bonita Neff

Student Contact: Jeff.Borchardt@valpo.edu Advertising is Secondary to Public Relations: The Greater Impact of Public Relations in the Branding Process Brian Boline, Kari Murphy, and Karla Olson Departmental Affiliation: Communications/Public Relations, College of Arts and Sciences Public relations is now taking the main role in launching brands with advertising absent or considered a minor role. Advertising as a secondary role, if used at all, is more likely used to maintain the established brand image. The shift of public relations to center stage is surprising to most people. The hypotheses in our study suggest that corporations who do not recognize this PR relationship to advertising are not as successful. Using this knowledge, 15 medium sized corporations were contacted about their branding campaigns. The PR/ADV efforts were analyzed from a function perspective. Data was also gathered on the "success" level of their communication efforts (sales, community relations, complaints, etc). The idea of diffusion theory being a public relations theory is particularly important in this study with an additional role for exploring psychodynamic theory in regard to publics. The results suggest that the more use a company made of public relations functions, the more likely the "branding" of their product was successful. Information about the Authors: The greater role of public relations over advertising in creating a brand image suggests an increasingly important role for public relations in the life of an organization. Learning of this leadership role of public relations interested our team greatly. With our work in VU's public relations student chapter (student client agency)and/or internships, the understanding of this role of public relations in branding is essential. Our research team includes Brian Boline (public and corporate communication major) who is planning to work in a healthcare facility or with a sports team having a focus on public relations. Kari Murphy (public relations major) is interested in working with event planning or publicity. Karla Olson (public relations major) is seeking an opportunity to work with a nonprofit organization. Faculty Sponsor: Bonita Neff Student Contact: Brian.Boline@valpo.edu The Leading Role of Public Relations in Brand Development: The Key to Strong Product Branding Katie Bova, Rachel Uhlig, Jack Wlezien Departmental Affiliation: Public Relations, College of Arts and Sciences Brands have entered a new era. Simple advertising alone will no longer establish or resonate effectively with the public. Yet strong brands are more effective than ever. With so many products on the market, who is picking up for advertising's slack? The answer lies in the role of Public Relations. What role do these groups play in the development of a brand? The strategies both PR firms and corporate PR are incorporating in order to establish a reputable and trustworthy name to their organization's publics is truly a leadership role. Analyzing the success of recent "Strong Brands" with regards to their branding and Public Relations strategies further clarifies the relationships these two areas have with one another. To demonstrate the

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effects of PR on a strong brand, two identical organizations with identical products and services are developed. One organization will not be a strong brand from a Public Relations standpoint. The other will be developed similarly to a "Strong Brand" with an emphasis on responsibility and trust; the primary cornerstone of public relations. The two organizations will be compared through focus groups to determine the effectiveness of the two approaches. Information about the Authors: Public Relations plays a variety of roles in organizations today. Developing and maintaining successful brands is becoming an increasingly large and important role PR practitioners are charged with overseeing. Katie Bova is a junior Public Relations with minors in Sociology and Public Speaking from Milwaukee, WI. She has branded an original product and presented it in other classes. She hopes to specialize in event planning in the future. Rachel Uhlig is a sophomore Public Relations major with a minor in Spanish from Lake Bluff, IL. She is interested in learning more about branding. She hopes to one day practice Public Relations using her Spanish background. Jack Wlezien is a junior Public Relations major with a Graphic Design minor from Park Ridge, IL. He has a particularly strong interest in experience-based branding. He hopes to use his knowledge to help educate and entertain people about their world. Faculty Sponsor: Bonita Neff Student Contact: Katie.Bova@valpo.edu

Assessing Risks for Skin Breakdown in an Acute Care Setting Erica Buczek, Elizabeth Dreier, Stacy Iten, Lindsie Jung, Nadine Wade, Matthew Wagner Departmental Affiliation: Nursing, College of Nursing

Pressure ulcers, a preventable type of skin breakdown, are a major healthcare problem in terms of patient morbidity and suffering, as well as economic impact (Hopkins, 2000). This project inquired as to what is the best way to assess for risk of skin breakdown in an acute care setting. CINAHL and Nursing Journals were searched using key terms such as skin breakdown, skin integrity, and pressure ulcers. Articles were critiqued by members of the group using criteria consistent with aspects of skin breakdown. Case studies, additional journal articles, and Norton and Braden Scales were utilized for further evidence. A synthesis of the research findings revealed that the application of a skin assessment tool was the best technique in assessing the risk for skin breakdown. Incidentally, the Braden Scale was found to be the best tool. Based upon these findings, a decision to change practice was made, and a specific protocol was formulated. Guidelines were established in order to achieve efficient and effective implementation and evaluation. Information about the Authors: Our group consisted of three traditional nursing students and three accelerated nursing students from various areas of the country. This experience emphasized the importance of teamwork in the area of research, which served to prepare us well for our role as future nursing leaders. Our many hours in the new Christopher Center were rewarded with a celebration at Pesto's, and we have enjoyed the time we have spent together. Faculty Sponsor: Dr. Nola Schmidt Student Contact: lindsie.jung@valpo.edu

The Spacing Effect: Does it Work for Rats too? Rebecca Bunn, Elizabeth Stelter, Lee Ann Cenefelt, and Kristin Czaplewski Departmental Affiliation: Psychology, College of Arts and Sciences

A wealth of research has indicated that memory is significantly affected by the distribution of practice trials. Specifically, spacing affects are normally demonstrated as subjects tend to have better memory for things learned in a spaced fashion and poorer memory for things learned in a massed fashion. The current study was conducted to examine this phenomenon in a flavor discrimination learning task. Rats were trained to discriminate between three different flavors of milk; vanilla, strawberry and chocolate. Subjects were pre-exposed to non target

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flavors prior to conditioning. A control group was pre-exposed to non target flavors once per day. The massed group received pre-exposures, two trials per day, while a spaced group was pre-exposed once every two days. Twenty four hours after the final pre-exposure subjects were given access to the target flavor. All were injected with an emetic to establish a conditioned taste aversion. Testing, conducted 48 hours after conditioning, consisted of a one bottle consumption test. Subjects were given vanilla, strawberry or chocolate milk, and amount consumed was measured. Statistical analysis revealed that the spacing effect did indeed occur. Subjects in the spaced group exhibited better memory, while subjects in the massed group demonstrated poorer memory. Information about the Authors: Rebecca Bunn is a senior psychology and biology major, pursuing graduate studies in child development. Elizabeth Stelter is a senior psychology major, pursuing graduate studies in industrial organizational psychology. Lee Ann Cenefelt is a senior psychology and criminology major, pursuing graduate studies in social work. Kristin Czaplewski is a junior psychology major. Faculty Sponsor: Dr. Angela Vernon Student Contact: Liz.Stelter@valpo.edu

The Benefits of Undergraduate Nursing Research Krystal Camalick, Liz Eischer, Sarah Cottrell Departmental Affiliation: BSN Nursing, College of Nursing Undergraduate research has been an ongoing process at Valparaiso University in the College of Nursing for six years. Through a joint effort with Hilltop Community Health Center, students had the opportunity to become involved in undergraduate research with the help of faculty members. Students have engaged in the research process through literature review, instrument development, data collection, data analysis, and dissemination of findings at research conferences. To evaluate the impact of this experience post-BSN graduation, a descriptive survey was designed to collect data from previous undergraduate team members. Questions were created to evaluate the benefits undergraduate research has given them in their nursing profession. Following data analysis, participants identified many benefits to undergraduate research which included: organizational and statistical skills, enhanced graduate school and occupational preparedness, time management, leadership skills, elevated interest in the research process, and teamwork. These findings corresponded with the literature review. Graduate school and certifications were pursued by a majority of the past participants. Overall, the past participants viewed their involvement as a positive experience and beneficial to their nursing career. The goal of this research was to ensure the continuance and possible expansion of undergraduate research in the College of Nursing at Valparaiso University. Information about the Authors: Krystal Camalick is a senior nursing major from Burr Ridge, IL. She has been involved in undergraduate research for 2 years. She plans to pursue pediatric nursing upon graduation. She also plans to attend graduate school to become a nurse practitioner. Liz Eischer is a junior from St. Louis, Missouri. She would like to pursue pediatric nursing as well. Sarah Cottrell is a sophomore and wishes to become a nurse anesthetist in the future. Faculty Sponsor: Theresa Kessler and Elise Alverson Student Contact: Krystal.Camalick@valpo.edu

Xylem Feeding by Yellow-bellied Sapsuckers and Tulip Tree Health Jessica Cate, Matthew Troutman Departmental Affiliation: Biology, College of Arts and Sciences Yellow-bellied Sapsuckers (*Sphyrapicus varius*) feed on xylem and phloem sap from living trees by drilling holes through the bark of the trees, often feeding quite extensively on certain trees. Extensive phloem sap feeding is associated with poor health in trees, either because the sapsuckers cause severe damage or because the sapsuckers are attracted to

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previously damaged trees, which have more nutrients in their phloem sap. This relationship has not been established for xylem feeding, and our goal was to determine if a correlation between tree health and sapsucker xylem feeding exists. We evaluated the health of pairs of attacked (mean = 215.22 rows of sapsucker holes) and unattacked (mean = 15.44 rows of holes) tulip trees (*Liriodendron tulipifera*) by measuring canopy diameter, leaf dry mass, and assigning a health index score. We found no significant differences in any of the measures of health and concluded that sapsuckers do not endanger the health of tulip trees, nor do they base their tree selection on the health of the trees. Our Spring 2005 research is focusing on further comparison of unattacked versus attacked tulip trees using sap flow rates, sugar content of sap, and growth ring width for the last 10 years. Information about the Authors: Jessica Cate is a senior Biology major and Matthew Troutman is a senior majoring in Biology and Art. Research was done for the entire 2004-2005 school year under Dr. Laurie Eberhardt in the Biology department. Faculty Sponsor: Dr. Laurie Eberhardt Student Contact: jessica.cate@valpo.edu VU Students: Social Problems Michelle Conley, Victoria McGinty, Kathryn Vandersall Departmental Affiliation: Social Work, College of Arts and Sciences Aims: Our aim is to discover what students within Valparaiso University campus view as social problems and how they should be addressed in the United States. Research Question: Are certain demographics (gender, major, age, religious affiliation, family income level, political affiliation) related to the way students who attend Valparaiso University view social problems around the United States and what they envision as solutions to these problems? Sample: We will be using a convenience sample. The three researchers will set up tables in different areas around the campus to get as many students as possible to fill out the intercept survey. As an incentive, candy will be offered to those who complete the survey. Expectations: It is expected that each of the factors listed (gender, major, age, religious affiliation, family income level, political affiliation) will have an effect on the way students view social problems. Due to the fact that the college population will soon be responsible for decision making (political and economical policies), it is important to be knowledgeable about their opinions on social problems and if certain demographics correlate with specific social problems. Information about the Authors: The interest in this topic came from a specific class discussion on poverty Some students that attended the class felt as though poverty was not an important social problem. This prompted the desire to find out what the majority of students on campus feel are social issues. Faculty Sponsor: Matthew Carey Ringenberg Student Contact: Michelle.Conley@valpo.edu Electron-Hadron Discrimination in the Endcap Electromagnetic Calorimeter at STAR Ross Corliss Departmental Affiliation: Physics, College of Arts and Sciences The completion of the Endcap Electromagnetic Calorimeter (EEMC) at STAR will provide a vast increase in the ability to probe the origins of nucleon spin. An important tool in this study is the ability to efficiently differentiate between electrons and hadrons as they pass through the calorimeter. Due to the geometry of the detector, very little information from other detector components can be applied to this discrimination. An overview of the STAR experiment will be provided, emphasizing the elements pertinent to this project. Calorimeter shower physics will be discussed, leading to potential methods of discrimination. Methodology will also be discussed. Information about the Authors: Ross is a senior physics and math double major. Faculty Sponsor: Donald Koetke Student Contact: Ross.Corliss@valpo.edu Developing an Evaluation of Tourism Promotion; the Integration of Marketing

Office of Sponsored and Undergraduate Research - Valparaiso University
and Public Relations Tactics and Strategies. Erica Corlito, Andrina Ertel, Tony Camacho Departmental Affiliation: Communication/Public Relations, College of Arts and Sciences Comparing marketing and public relations tactics and strategies in tourism stresses the importance of Integrated Communications. It is this mix of functions that suggests a vital partnership between marketing and public relations. The tactics/strategies utilized by professionals suggest the degree of success depends on the completeness of the models involved. Handling tourism clients allows the IC relationship to be explored. The Information Manipulation Theory serves as a background for examining the nuances of the two approaches. Besides interviews, a short electronic survey on IC indicates that PR has a larger and more thorough role in this communications mix. Information about the Authors: Having explored the world of Public Relations in and out of class, Andrina, Erica and Tony noted how the marketing and public relations relationship is becoming increasingly important. Determined to discover the separate and distinct approaches to this communication mix, the different facets of each area are assessed within a particular context--tourism. Since travel and diversity (a critical element of tourism) are a common interest, this topic is of growing interest in this industry. Erica Corlito, a junior double major in Theology and Public Relations has interests in Gospel Choir and PRSSA. Erica studied in Reutlingen Germany this past fall. Andrina Ertel, a Senior Public Relations Major and Sociology Minor and sorority member, held an internship with ESPN radio in Milwaukee. Tony Camacho, a Sophomore Public Relations major, double minor in Spanish and Photography, is the Vice President of Communications for his fraternity and PRSSA vice President. Faculty Sponsor: Dr. Bonita Neff Student Contact: andrina.ertel@valpo.edu A Priestly Poet...and We Didn't Even Know It!: Reading Leviticus 26 as Poetry. Caleb Crainer Departmental Affiliation: Hebrew/Theology, College of Arts and Sciences Poetry in Leviticus? As one of the most important and emotional parts of the Pentateuch, Leviticus 26 presents biblical scholars with an interpretive challenge. It is the only Levitical portion that is neither legal nor ritual and it reads differently from the material around it. Previous attempts to justify the existence of this lengthy portion have usually dismissed it as an epilogue to the Holiness Code (Lev 17-26) or tried to draw parallels to other scripture. Reading Leviticus 26 as poetry facilitates more accurate reception of the repetition and imagery in the text. This presentation will engage this chapter from a new angle and demonstrate that it is composed of major poetic structures. Information about the Author: Caleb Crainer is a Senior Theology/Hebrew Major from Hutchinson, Kansas. This paper was presented at the Midwest Regional meeting of the Society of Biblical Literature in February 2005. Caleb's future plans include graduate studies in Hebrew Bible and Ancient Semitic Languages. Faculty Sponsor: Carolyn Leeb Student Contact: Caleb.Crainer@valpo.edu Categories, Cues and the Humor Effect: An Investigation into the Effects of Encoding and Retrieval on Humorous Material Kristen Davidson, Holly Hagen, Candice Ludwig Departmental Affiliation: Psychology, College of Arts and Sciences The effects of encoding and retrieval on humorous material were investigated. Previous research has found that humorous material is better recalled than non-humorous material, i.e. a humor effect. The memory advantage for humorous material is evident in advertisements and education. An explanation of the humor effect could help explain more general memory processes. Two studies were conducted as a continuation of previous research. The purpose of these studies was to determine whether categories provided at encoding (e.g. sports or nature) or retrieval cues provided at recall impacted the humor effect. If

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categorized stimuli reduce the humor effect in the first experiment, it would imply encoding processes are critical to the humor effect. If cues provided at retrieval interfere with the humor effect in the second experiment, it would imply retrieval processes are critical to the humor effect. In both experiments, humorous and non-humorous slides were presented for fifteen seconds, and each stimulus was rated for humor and cohesiveness. After all stimuli were presented, a three minute distracter task was completed. Participants were then asked to recall as many slides as possible. Mixed factorial ANOVAs will be used to analyze recall and recall clustering (ie. a measure of mental categorization during encoding). Information about the Authors: Kristen, Holly, and Candice are all senior psychology majors at Valparaiso University. They are working on the project as an independent research course, under the instruction of associate professor Dr. Kieth Carlson. Holly and Kristen became interested in the project after being exposed to its theoretical foundations in a cognitive psychology course. Candice is continuing work on the project from a previous semester. In addition to psychology, Kristen has also focused her studies on Spanish and biology and is interested in pursuing a career in physical therapy, working primarily in the field of geriatrics. Holly wants to pursue a PsyD program in clinical psychology. She is interested neuropsychology and would like to work with brain injury/head trauma patients in the future. Candice has plans to enter a graduate program in Industrial/Organizational psychology and obtain a Master's degree. Faculty Sponsor: Kieth Carlson Student Contact: candice.ludwig@valpo.edu

Development of a Self Focus Measurement Kristen Durnbaugh and Sarah Severson Departmental Affiliation: Psychology, College of Arts and Sciences Different measures are often used in research to determine people's feelings or opinions without directly asking them. One problem with many of these measures is that it is very difficult to develop a measure that ranks highly in validity and reliability. The purpose of this research was to develop a measure of self focus to be used in future research on depression. Ambiguous situations were presented to participants and they were asked to interpret the situation by choosing one of several different options. These options were either self focused, neutral, or focused on others. Questions were chosen for the questionnaire if the different options were picked by participants with similar frequencies. Information about the Authors: Kristen is a senior with research interests in depression and other mood disorders. She has done previous research entitled The Power of Popular Culture on the Psychological Development of Body Image in Adolescence. Next year she is going to graduate school in Art Therapy to help people with issues such as body image and depression. Sarah is a junior Psychology major who is a member of Delta Delta Delta sorority, NRHH, and the Honor Council and many other campus organizations. Sarah plans on attending graduate school to obtain a degree in Clinical Psychology. She is also very interested in mood disorders and depression. Faculty Sponsor: Jennifer Winquist Student Contact: sarah.severson@valpo.edu

Do you believe in "Magic?" Lisa Gately, Michael Hansen, Sara Hicks, Margo Holthouse, Sadia Javed Departmental Affiliation: Marketing, College of Business Administration Research Objective: To obtain the most efficient and effective method of marketing Magic Sports to VU students. Research Methods: We will conduct interviews with other campus apparel stores such as the VU bookstore, Notre Dame, and Purdue. A focus group will also be conducted on campus which will be composed of 10 students randomly selected. Our discussion guide within the focus group will consist of topics such as logos, fit, colors, and advertisement recognition of current ads used by local companies. Also, a paper survey of 200

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people will be performed in the Union at Jester's cafeteria. The survey will help us determine which forms of media the students rely most on and also identify the needs of the students in terms of VU apparel. Analyzing Data: Minitab, Excel, and Access will assist us in analyzing the data collected. As a result, we hope to provide Magic Sports with effective marketing strategies which will in turn enhance its VU apparel sales. Information about the Authors: Margo Holthouse- Senior, Marketing/English major Lisa Gately- Junior, Marketing major Sadia Javed- Senior Accounting/Marketing Major Michael Hansen - Junior Marketing Major, involved in Residential Life, Campus Crusade for Christ, and leads a Bible study on campus. Sara Hicks- Junior marketing major involved in Delta Delta Delta sorority Faculty Sponsor: Peter Bug Student Contact: michael.hansen1@valpo.edu Variations on A Midsummer Nights Dream Nick Heggstad, Amanda Johnson, Jamie Gieschen, Jeff Dolecek, Karen Rockett, Bradi Kirkpatrick Departmental Affiliation: Department of Theatre, College of Arts and Sciences The central idea of the project was taking a play that we all knew, reading it again, and creating set, costume, and lighting designs for the play. Each person individually did their research, and came up with their own ideas on how they wanted their designs to look. We started by creating a collage of what we would want our world to look like, and then we take the collage and actually create specific designs. Throughout the process, we tried as little as possible to look at each other's ideas, in order to not affect each other's vision of the play. We also all created a design concept, or explanation for our designs. The main findings in this project is that even though we all started out with the same objective, we came up with six different results. Information about the Authors: Nick Heggstad, Amanda Johnson, Jamie Gieschen, Jeff Dolecek, Bradi Kirkpatrick, and Karen Rockett are all students in THTR 356 Design for the Theatre, taught by Ann Kessler. All students have an interest in not only theatre design, but also in acting, teaching, photography, music, art, and writing. Faculty Sponsor: Ann Kessler Student Contact: nick.heggstad@valpo.edu Implicit Attitudes Towards Feminism Jessica Jenen & Kristopher Schuster Departmental Affiliation: Psychology, College of Arts and Sciences "Feminism" seems to have a negative stigma attached to it in our society. Currently, there are no measures to adequately assess attitudes towards feminism. All of the current measures utilize self-report methods and therefore have problems with social desirability. In our experiment, we hoped to show that attitudes towards feminism could be shown through implicit measures by measuring reaction time to stimuli that was either congruent or incongruent with social stereotypes. We administered an implicit attitudes test in which participants were asked to place words into categories as fast as they could. The four categories included "good," "bad," "feminist," "traditionalist," and combinations of the four. Afterwards, participants filled out a demographic survey and a feminist perspectives scale in order to measure explicit attitudes towards feminism. They were also asked if they consider themselves feminists and what their definition of feminism was. We expect to find that the reaction times will be significantly shorter when the stimuli combinations are congruent with stereotypes than when they are incongruent. We also expect that the implicit measures will detect a trend closer to traditionalism than the explicit measures. Information about the Authors: Kristopher Schuster is a junior psychology major with a minor in human biology. He is from Romeo, Michigan. He plans to attend chiropractic college after graduation. Jessica Jenen is a senior psychology major with a minor in gender studies. She is from Tinley Park, Illinois and will be attending graduate school for counseling here at VU in the fall. Faculty Sponsor: Jennifer Winquist

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Anonymous Search Engine Design and Construction
Tom Kaitchuck, Philip Whaley
Departmental Affiliation: Math/CS, College of Arts and Sciences
Within the realm of Computer Science, design of a scalable search engine is an extremely difficult practical problem. It becomes even more complicated when censorship is a concern. Our goal was to make a scalable system, which will provide fast search results without any single point of failure or censorship. To do this, requests must be routed intelligently to avoid large bandwidth usage, data must be indexed so that it can be retrieved quickly, all the servers must be autonomous to prevent one failure from bringing down the system, and all of the servers must be anonymous so that nobody could threaten the owner in order to censor content. We present solutions to each of these problems and implemented a prototype search engine that achieves these goals.

Information about the Authors: There are two approaching challenges in information dispersal. First, computers cannot grow in capacity forever, and we have already reached the point where search engines cannot be run on a single data center. Algorithms must be developed to efficiently spread the use of bandwidth and storage space across a large number of distributed computers. The other is political in nature. Simply stated, 2/3rds of the world's population lives in areas where free speech is simply not allowed. People can be harassed, arrested, and even shot for saying certain things. In this regard, invisibility is the best defense. If nobody can discern who is producing or reading any particular piece of information, the only recourse such a government has, is to ban computers completely. By furthering both of these goals, we hope to improve the world through computing.

Faculty Sponsor: Michael Glass
Student Contact: tom.kaitchuck@valpo.edu

Socially Responsible Mutual Funds; The importance of moral investing
Jenna Kemp, Michael Rosenwinkel
Departmental Affiliation: Finance, College of Business Administration
Our research project and presentation will explore the potential in marketing mutual funds dedicated to holding only socially responsible corporations. At a time when social responsibility and "corporate caring" are desirable on many levels (in areas on fair and just global practices, environmentalism, etc), there is a possibility to support these organizations by an increase in stock investment. For those investors who see social issues as important to support financially, but also face the need to save for retirement, college funds etc, may desire to invest in such specialized mutual funds despite the possible restrictions. In our project, we will discuss these specialized mutual funds as they exist right now, how they could be better promoted and their potential market, and the importance of social responsibility and an increased moral standard in corporations as it relates to the Christian vocation and the socially aware individual.

Information about the Authors: Jenna Kemp is a senior Finance and Spanish major with a minor International Business. She will be graduating in May, 2005 and will be moving to Madison, WI to work for Epic Systems Corporation. She enjoys working with SALT (Social Action Leadership Team) and VU Dance Ensemble. Michael Rosenwinkel is a senior Accounting and Finance major and plans to graduate in December 2005. He enjoys playing music with his bands, "Queen Anne's Lace" and "William James" and for Celebrate services.

Faculty Sponsor: Zhenhu Jin
Student Contact: jenna.kemp@valpo.edu

Tight Subdesigns of the Higman-Sims Design
Steven Klee, Leah Yates
Departmental Affiliation: Mathematics, College of Arts and Sciences
An incidence structure consists of two sets, X and B, called the point set and block set respectively, and describes how the points and blocks are related. For example, if our point set is the set of points in the plane, and our

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block set is the set of lines in the plane, we might say a point, x , and a block, L , are related, or incident, if x lies on L . If we impose further restrictions on our structure, we obtain a symmetric (v, k, λ) -design. This is an incidence structure consisting of v points and v blocks such that every point is incident to k blocks and each block is incident to k points. Further, every pair of points is incident to λ blocks and every pair of blocks is incident to λ points. The Higman-Sims design is a symmetric $(176, 126, 90)$ design. We demonstrate that the point set and block set of the Higman-Sims design can be partitioned into 11 disjoint sets X_1, X_2, \dots, X_{11} and B_1, B_2, \dots, B_{11} such that each substructure (X_i, B_i) is a symmetric $(16, 6, 2)$ design.

Information about the Authors: Steven Klee is a senior math major from New Lenox, IL. After graduation, he plans to attend graduate school to work for his PhD in mathematics. Leah Yates is a senior math major at East Carolina University. After graduation, she plans to work in math education. This poster describes research done during the Summer 2004 Research Experience for Undergraduates at Central Michigan University under the supervision of Dr. Yury Ionin with funding from the National Science Foundation. Faculty Sponsor: Rick Gillman Student Contact: steven.klee@valpo.edu

Incorporating a Business, Independent Study Project MGT 310 Carissa Klingberg, Katie Steeb, Andrew Kotecki Departmental Affiliation: Management, College of Business Administration We have each researched what is required to incorporate our own small business. Each student created a different type of business and wrote a Mission Statement. We have filled out the necessary forms for incorporating a business, such as the Articles of Incorporation, and the Form 2553 to request an Employer Identification Number. Individual bylaws for each business were also created, as well as stock ledgers. We researched the I-9 and W-4 forms, along with the purpose of each. We also created Employee Manuals for each of our businesses, including information on insurance, benefits, and harassment and non-discrimination policies.

Information about the Authors: The three are working together on this project for their Independent Study in Human Resource Management: MGT 310 Carissa Klingberg: Senior, Management Major Katie Steeb: Senior, Management Major Andrew Kotecki: Senior, Management Major Faculty Sponsor: Elizabeth Gingerich Student Contact: carissa.klingberg@valpo.edu

Study of Current Trends within Interracial Dating Erika Klotz, Stephanie Hatfield, Katrina O'Connor Departmental Affiliation: Social Work, College of Arts and Sciences The purpose of this study is to research the differences in opinion that male and female Caucasians and male and female African-Americans have about interracial dating. The study will sample a college-aged population (ages 18-25) to look for patterns in the opinions of the people of different races and genders. All will be free to take the survey, but only the data collected from African-American males and females and Caucasian males and females will be analyzed. In this study, interracial dating will be defined as two heterosexuals who are engaged in a monogamous, continual relationship in which both individuals are of different races. African-American and the reference "Black" will be used interchangeably.

Information about the Authors: Erika Klotz, Stephanie Hatfield, and Katrina O'Connor are all senior Social Work majors. They are conducting research for SOCW365 Research Methods. Faculty Sponsor: Matthew Ringenberg Student Contact: Katrina.OConnor@valpo.edu

A Living Liquid? The Elasticoviscous Properties of the Mesenchymal Ectoderm of *Xenopus laevis* Gastrulae Stephanie Lowery, Beth Shelton Departmental Affiliation: Biology, College of Arts and Sciences The material nature of a tissue inherently restricts any proposed method of gastrulation. We present SEM evidence that the mesenchymal

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ectoderm tissue of *Xenopus laevis gastrulae* behaves as an elasticoviscous liquid. One characteristic of ordinary liquids is their ability to almost instantaneously rearrange their subunits (molecules) to dissipate shearing forces. By contrast, elasticoviscous liquids subjected to shear stress first show immediate stretching of the subunits followed by a slow rearrangement. SEM evidence demonstrates that the subunits (living cells) of mesenchymal ectoderm will spontaneously rearrange in organ culture to minimize their surface area much as a typical liquid will. However, SEM evidence also shows that when such aggregates are compressed, the cells will immediately stretch, but over time the individual cells will migrate and rearrange to eliminate interior stretching. This evidence suggests that the mesenchymal ectoderm of *Xenopus laevis* behaves as an elasticoviscous liquid; therefore, any proposed mechanism of ectodermal epiboly must coincide with the rules of an elasticoviscous liquid.

Information about the Authors: We both took Developmental Biology and really enjoyed performing our own experiments on the embryos. Then were we given the opportunity to pursue research with Dr. Davis. We will both receive a Bachelor of Science here at VU in May of 05 and hope to continue on to Medical School. Faculty Sponsor: Grayson Davis Student Contact: stephanie.lowery@valpo.edu

Evaluation of the Heavy Metals Burdens at Brownfields and Commons in Northwest Indiana Nicholas Minich Departmental Affiliation: Civil Engineering, College of Engineering A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of environmental contaminants. According to the environmental protection agency (EPA), there are more than 450,000 brownfields in the United States. Northwest Indiana has long been known for its industry; however, since 1970 downsizing in industry has caused an approximately 35 percent decrease in industrial employment and 18 percent decrease in the region population. Gary, East Chicago, and Hammond alone have an estimated 3,875 acres of abandoned industrial properties. The purpose of this project is to evaluate several brownfields and local common spaces within Northwest Indiana for heavy metal contamination using field investigations and Laboratory analysis. Evaluation of heavy metal contamination is a vital part of site characterization, which is the first step toward redeveloping and revitalizing underused or unused land resources. The project included developing sampling plans, sample collection procedures, and samples preparations and analysis. The analysis included determining the concentrations of zinc, cadmium, copper, and lead in soil samples collected from different brownfield and common sites. Information about the Author: Nick Minich is a senior civil engineering major from LaPorte, IN. In performing much of the analysis, he worked along with five December 04 civil engineering graduates (Chris Breinling, Aaron Frank, Jonn Kush, Kristine Martin, and Kevin Schaeckel). Faculty Sponsor: Dr. Zuhdi Y. Aljobeh Student Contact: nick.minich@valpo.edu

Making Globalization Work: Hope for the Women of Mexico Rachel Nelson Departmental Affiliation: IECA, College of Arts and Sciences Time and again, dissenters of globalization argue its harmful effects, especially those that are created in less developed countries, but rarely do they accompany these claims with suggestions of improvement. It is rare even to see a proposal that underdeveloped countries should simply shrug off globalization and its damaging results, as it has more recently become a well-recognized truth that without globalization a country and its people will struggle to survive. Harmful or not, globalization is a reality that all countries must deal with. Women in Mexico are especially susceptible to the effects of globalization as international businesses move in and bring job

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opportunities to the female population. These jobs have cumulative results of their own - both negative and positive - as women become more educated and better informed. Therefore, it is most productive and advantageous to look at what benefits can be derived from globalization and how its effects can be manipulated to create a lifestyle for women that is able to grow and strengthen under the ever-present pressures it brings.

Information about the Author: Rachel Nelson in an IECA and Spanish double major. She has worked with a Hispanic Mission of Valparaiso for two years, helping to spread Christianity to Hispanic families living in Valparaiso. Her work with the mission and her Latin America studies have provided clear examples of how difficult life can be in a developing country, and how more developed countries have a responsibility to provide economic aid to their poorer neighbors. Faculty Sponsor: Debra Ames Student Contact: rachel.nelson@valpo.edu

Coloring the Edges of Complete Graphs Amy Palash, Steven Klee, Dan Menna, William Young Departmental Affiliation: Mathematics and Computer Science, College of Arts and Sciences A graph consists of a set of points (vertices) on the plane with some pair of points connected with lines (edges). A complete graph is a graph in which every pair of vertices is connected. We color the edges of complete graphs. We fix a small integer "k" and in our coloring edges that contain that vertex can have at most "k" different colors. Our goal is to minimize the number of vertices that are connected by edges of any given color. We have already proven that a generally accepted conjecture for "k=3" is false.

Information about the Authors: Steven Klee is a senior math major from New Lenox, IL. After graduation, he plans to attend graduate school to work for his PhD in mathematics. Dan Menna is a junior from Elk Grove Village, IL, majoring in mathematics and secondary education at VU. He plans to be a high school math teacher. Amy Palash, a freshman, spends her spare time playing on the volleyball team here at VU. She is from Winfield, IL and is a math/secondary education major. She plans to be a high school math teacher. William Young is a senior at Hobart High School. He spends a great deal of his time practicing for his school's academic teams. He plans on majoring next year in mathematics and eventually becoming a college professor. Faculty Sponsor: Zsuzsanna Szaniszló Student Contact: Dan.Menna@valpo.edu

Marketing and Public Relations as an Emerging Relationship: Refining the Concept of Integrated Communication Lea Pupillo, Rachel Cooper Departmental Affiliation: Public Relations, College of Arts and Sciences Integrated Communication (IC) is the union of public relations and marketing. IC has been a hotly debated topic among marketing and public relations practitioners. Marketing and Public Relations working together in IC presents a challenge because these disciplines are competing for resources, control and prestige. Each area tends to believe that its respective discipline is best suited for meeting communication needs. Thus, there is often not a true working relationship with one area dominating the other when integrated A construct of Integrated Communication where the fullest potential of both marketing and public relations are utilized is viewed here as the best basis for working with an IC relationship. This study expands on two earlier VU surveys on identifying the functions for each discipline by students enrolled in business and public relations classes. An additional step will be to ask the students to assess why they believe a certain task is the responsibility either marketing or public relations. Although the previous research indicates a significant level of clarity about which discipline is in charge of which functions, this is contradicting how practitioners operate in the real world. The study hopefully will provide some insight into understanding the confusion in

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the practice. Information about the Authors: Rachel Cooper is currently a junior at Valparaiso University. She is a TV and Radio Production major with a minor in Public Relations. Rachel became interested in Integrated Communication because the line between consumer public relations and marketing is becoming less distinct. This research examines the mix of public relations and marketing and the impact both roles have on integrated communication. Lea Pupillo is currently a junior at Valparaiso University. She is a Public Relations major with a minor in Japanese and Business. She is preparing for two internships this summer, and is anticipating a career in international PR. Lea became interested in integrated communication because as business and public's style change, the need for a new form of communication was needed. Faculty Sponsor: Bonita Neff Student Contact: lea.pupillo@valpo.edu

Asthma in Zhejiang Province, China: Cause for Concern? Jason Reinking Departmental Affiliation: Department of Biology, College of Arts and Sciences In response to growing concerns about the prevalence and management of asthma in China, this study was conducted to extend our understanding of the asthma management paradigm in Zhejiang province in four specific areas: perceptions of asthma and its management, prevalence of asthma, treatments used to manage asthma, and availability of those treatments. Research methods included the distribution of 496 surveys to both rural and urban adolescents on asthma prevalence and management, interviews with individuals familiar with the paradigm in Zhejiang province, personal observations of health care facilities, and literature research. The project revealed an interesting coexistence of Western and traditional Chinese medicine providing two different systems of management with perceptions, diagnoses, and treatments specific to the respective treatment paradigms. A seemingly popular and effective third system of treatment was discovered consisting of a synthesis of both systems. Surveys revealed an adolescent prevalence of 1.41%, with 0.35% rural prevalence and a 2.84% urban prevalence. It is hypothesized that regional prevalence differences may be related to regional lifestyle differences, though questionable health care availability in rural regions could result in inaccurate prevalence data. In conclusion, the prevalence of asthma determined seems no causation for immediate concern, the high quality of the asthma management paradigm in urban Zhejiang province is due to the versatility of treatment methods available to the patient, and concerns about health care for rural Zhejiang province should be further explored. Information about the Author: Jason Reinking is a Biology, Chemistry, and Humanities major from St. Louis, MO. Faculty Sponsor: Dr. Martin Erhardt Student Contact: jay.reinking@valpo.edu

Non-profits: The Higher Challenge of Organizing Fundraising and Developing Relationships When Both Organizations and Publics are Targeted. Lauren Rempfer and Danielle LaPointe Departmental Affiliation: Public Relations/Comm, College of Arts and Sciences Often just organizations are addressed in fundraising efforts. Here it is proposed that targeting both organizations and publics is far more advantageous when fundraising. Since fundraising is the major source of revenue and ongoing relationships are necessary, charitable organizations must address the role of public relations as well as other organizations when developing campaigns. In order to be successful in these areas, an organization must implement public relations tactics/strategies. Since charitable organizations are growing at a rapid rate, the competition over donors is increasing the need for even more serious analysis. This is where public relations must step in to build relationships. This data analyzed the degree of success of charities in implementing strong PR campaigns to reach donors and

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the publics. Through interviews, background research, and media coverage of charitable organizations (American Red Cross, Make-a-Wish Foundation, Boys and Girls Club, and Habitat for Humanity) and their publics, the infrastructure operations were identified. The data revealed a wide range of PR tactics and strategies but was not as inclusive when dealing with the concept of publics. The results revealed the development of PR relationships in charities for both the organizations and the publics. Information about the Authors: Danielle LaPointe, Junior PR major Lauren Rempfer, Sophomore PR major Our interest in non-profit organizations began with our experience at Valparaiso University. Exposure in classes, Festival of Voices, and the Greek system has provided us with experience and has sparked our interest in this area of public relations. We have looked at the role of public relations in non-profit organizations through various case studies. Our understanding of public relations in non-profit organizations has led to internship opportunities, particularly a summer internship at the Chicago Hostelling International, a non-profit organization. Non-profit organizations are unique in that they exist primarily to serve or help people in some way. Public relations practitioners are able to be proactive and promote services that cater to the best interests of the public. In terms of the study, non-profit organizations seem to demonstrate and implement public relations tactics in their most basic form. Faculty Sponsor: Bonita Neff Student Contact: Lauren.Rempfer@valpo.edu

A Computational Study of Propene Oxidation by Vanadium Oxide Catalysts via a Combined Thermodynamic and Kinetic Analysis Timothy Rogers Departmental Affiliation: Physics, College of Arts and Sciences Vanadium oxide catalysts supported on metal oxides are used industrially for the oxidative dehydrogenation (ODH) of alkanes to alkenes, but the chemical structure of these catalysts as well as the mechanism by which they catalyze reactions are not yet well understood. An important side reaction in the ODH process is the subsequent catalyzed combustion of alkenes by the same vanadia catalysts. It is desirable to suppress this reaction channel in order to produce alkenes with high selectivity. Computer models for the chemical adsorption of propene onto cluster models for vanadia catalysts (VO₅H₅ and V₂O₉H₈) have been carried out using Hartree Fock and density functional theoretical methods to determine the thermodynamic energy of reaction (ΔH^\ddagger) for the first step of the catalyzed combustion of propene. A total of nine different adsorbate complexes were investigated to determine the most thermodynamically favorable adsorption pathways. From these data, the four most favorable adsorbate complexes have been chosen and analyzed via the nudged elastic band method to find transition states and the associated activation energies (E_a) for this adsorption step. From these calculations we have discovered that while the separated reactant species are most stable in the singlet ($S=0$) spin state, the product complexes are often most stable in the triplet ($S=1$) spin state. I will describe the significant effect this phenomenon has on the values of ΔH^\ddagger and E_a for the propene adsorption reaction. Information about the Author: I am a chemistry and physics double major planning to pursue a career in theoretical physics. This project came about as an extension of research I performed at Argonne National Laboratory during my summer internship. Faculty Sponsor: Stan Zygmunt Student Contact: Tim.Rogers@valpo.edu

Obtaining and Analyzing the Light Curve Of the Binary System BD +42 2782 Bradley Rush Departmental Affiliation: Physics and Astronomy, College of Arts and Sciences The star system BD +42 2782 has only recently been discovered to be a binary star and as such has only a preliminary period. I made observations this fall with the 16-inch

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telescope and CCD detector at the Valparaiso University Observatory to obtain a light curve. We also obtained a complete light curve this past summer; small differences are apparent when the two are compared. The timings of minimum for the two sets of light curves will be compared with the published ephemeris to refine the period ($p \approx 0.37$ days). These new light curves will be modeled using the synthetic light curve program Binary Maker to determine the orbital inclination, the difference in temperature, and the relative sizes of the two component stars.

Information about the Authors: Brad Rush is a senior physics and mathematics major. He is planning on attending graduate school in astronomy this coming fall. Faculty Sponsor: Bruce Hrivnak Student Contact: brad.rush@valpo.edu

Media Violence: Does It Cause Behavioral and Emotional Effects Ryan Shoemaker, Andrina Ertel Departmental Affiliation: Social Work, College of Arts and Sciences

Our research study that will be conducted is the effects on what media violence has on college students. Our research will be looking at behavioral effects as well as emotional effects. Our subjects will be asked to reflect on times when they have felt aggressive, felt angry, or showed any type of emotion after playing a video game, watching a movie, or watching television shows. Our subjects that we will be using are Valparaiso University students. The only requirement that will be imposed is that the subjects must be at least 18 years old to participate in the study. The subjects will be asked to complete a questionnaire. There is a potential risk that some of our subjects might encounter emotional distress from some of the questions. In order to minimize this risk, the subjects will be asked to sign an informed consent form. This form will inform our subjects that there will be some questions that might upset them. Our subjects will be well informed about what is included in our study and what our study is about. Our study will prove that the media can cause people to feel aggressive or feel angry.

Information about the Authors: The media has been a major part of our society for a long time. I became interested in media violence when the Columbine shootings happened when I was in high school. I recall how the parents mentioned how certain video games and movies drove the students to shoot other students and teachers. I watch a lot of movies and I play a lot of video games. There were sometimes that I have felt aggressive and angry after playing certain video games, but this doesn't happen all the time. The goal of this study is to prove that everybody is different when they watch television shows, movies, or play video games.

Faculty Sponsor: Matthew Ringenberg Student Contact: Ryan.Shoemaker@valpo.edu

Beyond Damage Control: The Varying Roles of Public Relations in Large American Corporations Katie Siepman, Eid Salem Al-Darmaki, Michael Nevergall Departmental Affiliation: Communication, College of Arts and Sciences

Common perceptions of public relations categorize it as nothing more than damage control. In corporate America, however, those companies that have successfully integrated public relations are finding the significance of an untapped resource. Public relations is at work in many aspects of an organization, incorporated through media, investor, community, and employee relations. The goal of public relations is to foster strong relationships with each of these constituencies. Large American corporations, such as McDonald's, Disney, and Microsoft, have extensive public relations strategies to reach these audiences and maintain a positive public image. The most effective campaign includes messages directed at each specialized public. Our hypothesis is that the successful outreach of these companies comes from the use of similar, or even identical, public relations strategies. We will conduct a corporate analysis of these companies through internet research and article databases. We will

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also be surveying current business and communication students to judge their perceptions of public relations. We believe that, while it may masquerade under a variety of titles, public relations is an integral part of corporate image and success.

Information about the Authors: We were fascinated by the movie "Supersize Me" to see how McDonald's, its loyal customers and the American public would react. Successful corporations use public relations efforts on a regular basis, not only for reactive purposes, but to introduce new products, keep employees happy, and strengthen their image. Katie Siepman, a junior public relations and psychology major, has been involved in many projects including the "Festival of Voices." She currently has an internship with the University Guild and hopes to work in corporate public relations. Eid Salem Al-Darmaki is an international economics major and public relations minor from the United Arab Emirates. His interest in public relations is in developing international relations for private or governmental work. Michael Nevergall, a senior marketing major and corporate communication minor, is currently conducting his career search. With his business background, Mike is very interested in the role public relations plays in corporate America.

Faculty Sponsor: Dr. Bonita Neff Student Contact: mike.nevergall@valpo.edu

Graphical Searching Results Fred Spreen Departmental Affiliation: Mathematics and Computer Science, College of Arts and Sciences

Information retrieval applications have grown through time. While original applications enabled knowledgeable users to search thousands of documents, nowadays any untrained web user can search billions of web pages. However, the one aspect of information retrieval applications that has remained relatively unchanged is the result: the user receives a simple ordered list of documents to read through. In our experiment, we are attempting graphical representation of IR results. The user receives a colored, wordless map of the document collection, where colors and intensities represent the match of the underlying documents to the search terms. The user then clicks on the graphical map to view the desired documents. In this way we hope to exploit the much greater information-processing capacity of the visual field. Such a map also highlights the structure of the document collection; in our case we are using the Code of Federal Regulations, so that if some chapters of the code are collectively relevant this fact is visible at a glance.

Information about the Author: Fred is a freshman majoring in Computer Science who has been programming computers since sixth grade. He has a passing interest in languages which he hopes can someday be integrated with his love for computers. He is also a member of Christ College. Faculty Sponsor: Michael Glass Student Contact: Fred.Spreen@valpo.edu

Properties of Bipartite Self-Complementary Graphs Laura Stellfox Departmental Affiliation: Mathematics and Computer Science, College of Arts and Sciences

A bipartite graph is a graph where the vertex set can be decomposed into two subsets U and V such that each edge of G joins a vertex of U to a vertex of V . A bipartite graph is denoted as $G(U, V)$. Given a bipartite graph $G(U, V)$, its bipartite-complement is the bipartite graph with the same vertex set as G , but with the edge set $\{uv \mid u \text{ is a vertex in } U, v \text{ is a vertex in } V, \text{ and } uv \text{ is not an edge in } E(G)\}$. A bipartite graph G is bipartite self-complementary if G is isomorphic to its complement. In my research, I explored the general properties of bipartite self-complementary graphs.

Information about the Author: Laura is a senior mathematics and secondary education major from Crete, IL. Her research in bipartite self-complementary graphs is her honors work. Faculty Sponsor: Rick Gillman Student Contact: laura.stellfox@valpo.edu

Public Relations and Pop Culture: Its Role, Publics, Importance, and Success Shannon

Office of Sponsored and Undergraduate Research - Valparaiso University
Steuber, Joanna Bender, Brian Rzepka Departmental Affiliation: Public Relations,
College of Arts and Sciences Public Relations role in pop culture consumes a
lot of time and resources in corporate America. This study surveyed students at
Valparaiso University on three levels: 1) students' consumption habits, 2) students'
awareness of pop culture, 3) the awareness of the role of public relations. The
research suggests students consume products without much critical thought. Since
Public Relations has a significant role in US culture, the potential for images and
messages to reach students is a fact of everyday life. PR shapes and frames the
images and messages that create fads. Here the Diffusion Theory is applied to
document how people process and accept information. Such a theory illustrates
how students adopt new ideas. The five stages of adoption include awareness,
interest, evaluation, trial, and adoption. The public relation role in the diffusion
theory illustrates the effectiveness in building relationships and creating the related
messages. Information about the Authors: PR plays a large role in the field of
pop culture. Our interest in this topic originated from watching movies, reading
magazines, and simply keeping up with current events. Through research we
discovered that without PR, pop culture would suffer drastically, and the publics
would not be reached. We aim to discover just what it is that PR offers in the
wide spectrum of pop culture. Our background in the PR field is confined strictly
to our college education. The three of us, Shannon Steuber, Joanna Bender,
and Brian Rzepka, have taken PR classes, specifically Principles of PR, Case
Studies in PR, PR Practice and Theory, and Crisis Communication. We have
also gained experience and insight through PRSSA, Spark PR, and internships.
Faculty Sponsor: Dr. Bonita Neff Student Contact: Shannon.Steuber@valpo.edu
Light Variability of Selected Asteroids Marta Stoeckel Departmental Affiliation:
Physics and Astronomy, College of Arts and Sciences Asteroid (354) Eleonora
was observed in order to create a light curve showing variations in brightness
over time of the asteroid. Since variations in brightness are due to variations in
the size of the asteroid face turned toward Earth, the light curve could then be
used to determine the rotation period of the asteroid, essentially the asteroid's
day. Currently, it appears the period should match previous measurements of
Eleonora's period. The light curve will also be used to model the shape of the
asteroid, giving the relative size of at least two of the asteroid's axes. Information
about the Author: Marta Stoeckel spent the past summer working as an astronomy
research assistant, so became familiar with the Valparaiso University Observatory
(VUO) and was interested in making use of that facility for her senior research
project. She plans to pursue graduate study in geophysics and planetary science,
so was interested in finding a way to include that interest in her project, as well.
Asteroids provided an excellent way to meet both interests. Faculty Sponsor:
Prof. Todd Hillwig Student Contact: marta.stoeckel@valpo.edu Cross-Section of
the Reaction $Kp \Rightarrow \Sigma(1385) + \Gamma$ In the Crystal Ball Jason Summerlott
Departmental Affiliation: Physics and Astronomy, College of Arts and Sciences
The Crystal Ball Spectrometer is a photon detector composed of 672 NaI crystals.
Currently located at Brookhaven National Laboratory, the detector was used to
study a series of K-p and Pi-p reactions at various beam momenta. The particles
are bombarded at a hydrogen target, and the end products of the decays are
registered by the surrounding crystal detectors. The photons produced in this
way are forced to pair produce when they enter the NaI crystals, and the charged
particles then deposit their energy in the crystals. Neutrons, another common end
product, can also be detected. By examining event data from the Crystal Ball, an

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experimental values for the cross section of the reaction $K^- + p \Rightarrow \Sigma(1385)$
+ Γ is being determined. This determination includes the compensation
for and subtraction of background events from the recorded data, as well as
the determination of acceptable variance in the quantities reconstructed during
computer analysis of the event data. Analysis is being conducted on beam
momenta ranging from 500 to 750 MeV/c. Also being examined is the similar
reaction $K^- + p \Rightarrow \Sigma(1385) + \pi^0$, which has a considerable effect on our
analysis, as it is a background reaction which also has an undetermined cross
section. Information about the Author: I am a physics major with an interest in
particle and quantum physics. I began this project in the course of a summer
internship here at VU, and it has proved valuable to me in familiarizing myself
with the methods and tools of physical research. Additionally, the subject itself
is intriguing and has the potential to benefit other researchers in the area by
determining a previously unknown value in conjunction with similar efforts by
other members of the Crystal Ball collaboration. Faculty Sponsor: Professor
Shirvel Stanislaus Student Contact: jason.summerlott@valpo.edu

Altruistic or Egoistic: An Analysis of Carter Administration Policy in Ethiopia
Kyle Svilar
Departmental Affiliation: Political Science, College of Arts and Sciences
As the threat of communism spread westward across the globe during the Cold War years
(1945-1991), the United States adopted a foreign policy centered on containing
the spread of communism. Through the implementation of this policy, the U.S.
identified areas deemed susceptible to communism and attempted to dominate
these areas through subsequent foreign and economic policies. Further, with
the Ogaden War raging between Ethiopia and Somalia, Ethiopia became an
area of interest to the U.S. in its attempts to quell Soviet influence in the Horn of
Africa. One objective of this study is therefore to provide an historical analysis of
U.S.-Soviet foreign and economic policy towards Ethiopia during the Cold War.
While widely revered as altruistic human rights advocates, President Carter and his
administration found difficulties in maintaining successful relations with Ethiopia.
Two years prior, in 1974, Ethiopia endured a bloody, military revolution that had
overthrown America's faithful client-state, Emperor Haile Sellassie's regime, and
instituted a military dictatorship whose ideology opposed much of what Carter
represented. This study will thus draw from the historical record to provide an
analytical base to examine how Ethiopian-U.S. relations deteriorated during the
Carter Administration (1977-81) to the point where Ethiopia flip-flopped into the
Soviet orbit. This work will also gauge how the Carter Administration's military and
foreign policy in Ethiopia differed from other African policy in a "realism versus
dualism" context. Information about the Author: Kyle Svilar is a senior majoring in
political science with a concentration in international relations. Faculty Sponsor:
Prof. Chuck Schaefer Student Contact: Kyle.Svilar@valpo.edu

Taking Flight With
Butterfly Kisses Katherine Swank, Marisa Valdez, Katie Wanderer, Kevin York, and
Stacy Zarr Departmental Affiliation: Marketing, College of Business Administration
Butterfly Kisses is an upscale children's clothing retailer in Valparaiso, Indiana
owned by Jennifer Ziemkiewicz. One of the main problems Butterfly Kisses faces
is advertising effectiveness. Low brand awareness, wrong brand image, and the
usage of wrong media are symptoms to be examined. The purpose of the study
is to determine the best way Butterfly Kisses can reach new customers while
maintaining a solid foundation with its current clients. The following research
objectives to be explored include determining: 1. Brand awareness among current
and potential customers 2. Brand image among current and potential customers

3. Effectiveness of advertising media 4. Impact of low sales of boys apparel on the business The basic research method will be applied to this project. Surveys will be utilized in conducting descriptive research. Current customers in the company's database will be surveyed via e-mail and will be offered a percent-off discount as an incentive to complete the survey. Group members will gather and categorize the data according to demographics and purchasing needs. Thorough analysis of our findings will allow us to determine the effectiveness of Butterfly Kisses' marketing. We will also offer specialized recommendations wherever deficiencies are present.

Information about the Authors: Of the five authors collaborating on this project, two are graduating seniors and three are juniors. Our various majors (accounting, finance and marketing) give us a distinct advantage in that we are able to analyze a single issue from multiple points of view. The team is united by a strong sense of dedication and professionalism as we utilize our classroom tools to provide a solution to a real-life problem.

Faculty Sponsor: Peter Bug Student Contact: Marisa.Valdez@valpo.edu

Riches Lilia Vassileva, Christina Reed, Jordan Chaddock, Michelle Rossi, Zachary Hall, Alison Thalhammer, Connie Colvin, Kristin Renn, Nick Heggstad, Beth Piel, Bill Carns, Issac Schoepp

Departmental Affiliation: Theatre, College of Arts and Sciences

Over a year ago while looking through dozens of plays in hope of finding one I wanted to direct, I decided on one chief criteria my selection had to answer to: the play needed to tackle a current problem in our society. The action of this play mimics the disintegration of a marriage. Through the plot structure of RICHES we see the struggle of a couple to keep their marriage alive. It sheds light on literally fighting for your marriage. The social backdrop against which this play is set is that glaring statistic that over fifty percent of marriages within the United States currently end in divorce. That is something that our society, unfortunately, has ceased to gape at and begun to accept as a norm. However instead of acknowledging the fact in defeat we need to resist it. We need to take away its newly acquired status as a "norm" in our society, and give it back its original label of "taboo". What makes Riches worth showing at the presentation is how common this couple's struggle is, and how uncommon their choice in the end is, and the fact that the entire show was student directed/managed/designed.

Information about the Authors: These students are part of the VU Theatre Department. They range from freshmen to seniors and represent a wide range of talents and interests within the theatre. What made this production so satisfying, was all of them coming together and bringing their talents to the table fearlessly, and working together to create a full length one-act show and produce it as closely to the professional theatre as we could.

Faculty Sponsor: John Steven Paul Student Contact: Lilia.Vassileva@valpo.edu

Set-Theory: Analysis of Webern's String Quartet, op. 5, Mov. 4. with Discussion of the Advantages/Disadvantages of Set Theory analysis in Nonserial Atonal Music Michael Weimer

Departmental Affiliation: Department of Music, College of Arts and Sciences

The standard analytical system for examining nonserial atonal music was devised by Allen Forte and has now become known as set-theory. It provides a means for determining coherence through the identification of a "new" kind of motive (called pitch-class set, or cell). Cells consist of important groups of ordered and labeled pitch classes which are identified through the process of segmentation. The objective of my set-theory analysis is to identify potential sets employed in the piece and to determine which of these sets are used most frequently and how they may be related. Finally, I will discuss the advantages and disadvantages of Forte's system of analysis with consideration to this piece.

I found that Webern utilizes a small number of motives in repetition and variation to create unity within the movement. These motives or cells are often transposed to different pitch classes and are varied by stretching and shrinking the intervals of an original cell. The main cells of the piece were found to be $\{0,1,6,7\}$ and $\{01,5,7\}$. Much of the melodic and harmonic material stems from these two cells. The various cells and sub-cells are identified both on the score itself-with color-coded boxes- and in a chart showing the locations and relationship of the various cells. I concluded that set-theory analysis is helpful for identifying motivic similarities within the piece. However, the process of segmentation is very subjective; any such analysis would represent only one possible explanation. Furthermore, the relationships between cells are often not audible to the listener and therefore the system is more effective from a theoretical perspective than aesthetic.

Information about the Authors: Michael Weimer is a Senior Trumpet Performance Major from Greenwood, IN. After receiving his Bachelor of Music Degree he will plan to attend graduate school to continue study in trumpet performance. Faculty Sponsor: Dr. John Bernthal Student Contact: mike.weimer@valpo.edu

Exploring Themes of Race and Diversity on Valparaiso University's Campus Amy Wilford, Stephanie Hogan, Emily Hollingsworth Departmental Affiliation: Social Work, College of Arts and Sciences

Historically, the number of racial incidents at Valparaiso University and presently the lack of minority representation cause one to examine continued presence of racism. The aim of the study was to gain understanding of racial issues at Valparaiso University from the perspective of both students and faculty. In particular, the study intended to discover how often acts of racism or discrimination are experienced or witnessed on campus. How much do students and faculty know about racism and prejudice on campus? How do students and faculty feel about Valparaiso's efforts to promote racial diversity and understanding on our campus? The sampling was intentional and faculty was contacted through a mailing. Information was obtained from students in two ways: distributing surveys to a number of chosen classes, and contacting minority organizations on campus. Students who have already completed the survey were asked not to retake it. The expected findings were a difference in opinion between students and faculty, but this may be due to faculty answering according to social desirability. Also, results were expected to show a significant difference in response between minority and Caucasian students.

Information about the Authors: We are social workers major with an interest in social justice. We value diversity and recognize the important role it plays in education. As part of our research methods class, we wanted to explore diversity in education on this campus. In light of the reduction of the cultural diversity requirement and the recent celebration of Dr. Martin Luther King Jr. Day, we are reminded of the issue of race on Valparaiso University campus. Historically, the number of racial incidents at Valparaiso University and presently the lack of minority representation cause one to examine continued presence of racism. Faculty Sponsor: Matthew C. Ringenberg Student Contact: Amy.Wilford@valpo.edu

Word-search Puzzles Without the Words: Applying Modern Language Modeling to Computationally Building Puzzles Clark Wise, Israel Garcia-Collantes Departmental Affiliation: Computer Science/Mathematics, College of Arts and Sciences

Word search puzzles, where you locate and circle words in a large square of letters, are a popular pastime. From the computing technology standpoint, creating these puzzles is an interesting problem. It is relatively easy to start with a list of words --a dictionary--and programmatically combine words picked from this list into a puzzle by brute-force searching. Our

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experiment is to apply the numerical models of computational linguistics and artificial intelligence to create these puzzles without picking words from lists. We apply statistical n-gram models, a technique developed for spelling correction and noisy speech understanding, to create squares of probable words. Many of these are pronounceable accumulations of letters not attested in any dictionary, but with increasing sophistication of the model we can increase the number of usable words. We have also applied genetic algorithms to increase the density and average length of words. Working off numerical models, we think we should be able to produce puzzles of the same quality as those found in commercial word-search publications.

Information about the Authors: Clark Wise is a freshman Computer Science and Mathematics double major from St. Louis, MO. He wishes to pursue a career as a software engineer but is open to varying offers and opportunities in concurrence with his many related interests. Faculty Sponsor: Michael Glass
Student Contact: clark.wise@valpo.edu

Context Dependent Memory and Its Effect on Eyewitness Testimony Authors: Tim Kolzow, Jennie Obrecht
Departmental Affiliation: Psychology, College of Arts and Sciences
Context-dependent memory is the concept of being able to remember something more accurately in the room in which it was learned than in a different environment. Visualization cues may help recreate this scenario by prompting a person to vividly imagine the learning environment during testing. Both ideas have a big impact on the legal system because so much is based on eyewitness testimony. We hypothesized that not only would context affect memory, but that adding visualization cue would help recall an event even better.

Information about the Authors: Tim and Jennie are studying both Psychology and Criminology at VU and are interested in combining the two fields to better understand their unique relationship. Faculty Sponsor: Jennifer Winquist
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