

WORD

WestConn Research Day



Keynote speaker:
Noted science journalist **John Horgan**
2 p.m.

Thursday, May 11, 2006
2 – 5 p.m.
Science Building Atrium
Midtown campus



WestConn Research Day

May 11, 2006

Program

I. Seminar Presentations **12:00 p.m. – 1:30 p.m.**

Student Center, Room 201

II. Opening Address **2:00 pm – 2:30 p.m.**

"Science's Greatest Unsolved Problem" presented by Keynote Speaker, noted science and journalist John Horgan.

Science Building, Room SB 125

III. Poster Presentations **2:30 p.m. – 5:00 p.m.**

Atrium, Science Building

Refreshments will be served during the conference in the Atrium of the Science Building

Student Participants

Undergraduate Students

Name	Abstract #	Session
Karianne Allo	1	Poster
Justin Alperin, Michael Coleman, Michael Shoushani	2	Poster
Stephanie Biello	64	Seminar
Lori Blanchfield	65	Seminar
Laura Bobel	3	Poster
Lori Bonavist	4	Poster
Kerri Borak	5	Poster
Tamara Bridgham	6	Poster
Sara Brierley	7	Poster
Matthew Calvanese	8	Poster
Jen Caroti, Kristin Catalano, Marianne Baboo	9	Poster
Winnie Chau, Kaity Mack & Melissa Diacri	10	Poster
Saief Chowdhury	11	Poster
Kim Crayco	12	Poster
Daniel Cunningham	13	Poster
Laura Daley	14	Poster
Bethany R. Danburg	15	Poster
Jonathan Dator and Elianna Santiago	16	Poster
Maria M. Davidson	17	Poster
Joseph DePasqua	66	Seminar
Stevan Deura	18	Poster
Sharon DeWitt	19	Poster
Ibrahim Diwan	20	Poster
Kenneth Gardner, Brian Bartolo, Kris Sullivan, Gale Alexander, Kerry Perrotta	21	Poster
Patricia Garrity	22	Poster
Elyse Hansen	23	Poster
Shannon B. Healy, Jillian P. Hettinger, Brittany M. Vilaro	24	Poster
Amy Horrigan	25	Poster
Brian Kersten	26	Poster
Rosa T. Kyek	67	Seminar
Melissa Labozzetta	27	Poster
Sara Leo	28	Poster
Aubrey List	29	Poster
Ashley Ludwig	30	Poster

Name	Abstract #	Session
Ken Lyke	31	Poster
Jennifer Mancuso	33	Poster
Joann Mennillo	35	Poster
Heidi Miedema	36	Poster
Robert Miller	37	Poster
Richard Minto	38	Poster
Marsha Murray, Taisha Rivera and Diana Torres	39	Poster
Stephanie Nunes	40	Poster
Amy Partrick	42	Poster
Jenna Rao	43	Poster
Emily Retter	44	Poster
Stacey Rivera	45	Poster
Jaelyn Rose, Lauren Hambidge, Diana Lock	46	Poster
Joseph Roy	47	Poster
Lindsay Ruta	48	Poster
Elianna Santiago	49	Poster
Evan Seitz	68	Seminar
Amy M. Serino	50	Poster
Heather Serphillips	51	Poster
Laura Skrip	52	Poster
Samantha Smith	69	Seminar & Poster
Jennifer Strohmeyer	54	Poster
Yujian Sun	55	Poster
Shannon Tunick	56	Poster
Christa I. Van Buskirk	57	Poster
Elizabeth Villalona	58	Poster
Jessica M. Ward	59	Poster
Carl Willman	60	Poster
Gerald Zabawa	61	Poster
Claire Zimmerman	62	Poster

Student Participants

Graduate Students

Name	Abstract #	Session
Robert J. Bepko and John R. Moore	63	Seminar
Betsy Lynch	32	Poster
Becky E. Mathews	34	Poster
Paul O'Brian	41	Poster
Donna Stein	53	Poster

Faculty Participants

Research Sponsors

Faculty	Department
Dr. James Boyle	Physics, Astronomy, & Meteorology
Dr. John R. Coleman	Management
Dr. Karen Daley	Nursing
Dr. Dennis W. Dawson	Physics, Astronomy and Meteorology
Dr. James Donegan	Accounting
Dr. Robin Flanagan	Psychology
Dr. Jennifer Frederick	Chemistry
Dr. Michele Ganon	Accounting
Dr. Kevin Jay Isaacs	Music
Dr. Todor Ivanov	Computer Science
Dr. Pat Lund	Nursing
Dr. Susan M. Maskel	Biology
Dr. Yuan Mei-Ratliff	Chemistry
Dr. Mary Nelson	Psychology
Dr. Lydia Novozhilova	Mathematics
Dr. Patricia O'Neil	Psychology
Dr. Paula Secondo	Psychology
Dr. Russ Selzer	Chemistry

Abstracts

Poster Presentations

listed in alphabetical order by first author

1 MEDIA IMPACT ON BODY IMAGE

Karianne Allo (Dr. Mary Nelson, Dept. of Psychology)

For some time many people have maintained that the media has a profound impact on the body image of viewers. To test this belief, college students completed a body image survey reporting views on media and body image, current versus ideal weights and the extent in which media affects them either with the presence or absence of media influence. In contrast to previous findings, no differences in body image were identified as the result of media influence or gender. Possible reasons for the lack of significant results and implications for future suggestions are discussed.

2 EXERCISING A STOCK OPTION: SIMULATION STUDY USING MAPLE

Justin Alperin, Michael Coleman, Michael Shoushani (Dr. Lydia Novozhilova, Dept. of Mathematics)

The lognormal random walk model for the behavior of the price of a stock is a standard mathematical model in finance that has been found to work well in practice. Based on the model, a simulation study of the expected worth of owning an option to purchase a stock any time during a certain period for a specified price was designed and implemented in CAS Maple. Further numerical experimentation is needed to test the simulation using available real life data.

3 IS BEAUTIFUL GOOD AND UGLY BAD? EXAMINING PEOPLE'S REACTION TO IMPLICIT DIFFERENCES IN ATTRACTIVENESS

Laura Bobel (Dr. Patricia O'Neill, Dept. of Psychology)

Is it true that beautiful people receive greater benefits in society just from being attractive? This study examines the relationship between helping behavior and attractiveness. An individual's willingness to help as a function of attractiveness and gender of a confederate was measured. Two confederates were used, one male and one female, and their style of dress was varied. The confederates approached individuals in a shopping center parking lot and asked them for directions to a centralized, well-known location. Results indicate that attractiveness can affect willingness to help.

4 EFFECT OF THE MEDIA ON PRESSURE TO BE THIN IN WOMEN

Lori Bonavist (Dr. Patricia O'Neill, Dept. of Psychology)

The purpose of this study was to determine whether or not the thin ideal portrayed by the media puts pressure on women to be thin. Forty-five female, undergraduate students were randomly assigned to one of the following groups: thin female photos, plus-size female photos and photos featuring no females. After viewing the photos, participants completed the Pressure to be Thin questionnaire. A high score indicated greater perceived pressure to be thin. The results revealed that women exposed to thin female photos felt more pressure to be thin than women exposed to plus-size or no female photos.

5 MUSIC, STATE OF MIND, AND MEMORY

Kerri Borak (Dr. Patricia O'Neill, Dept. of Psychology)

The purpose of this study was to investigate the effectiveness of music on memory recall, and state of mind and its effect on information learned. Thirty-nine Western Connecticut State University undergraduate students were randomly assigned to one of four conditions. All were asked to listen to a list of words while listening to music. The participants were then asked to complete a simple math worksheet as a distraction measure. After two minutes, participants were asked to recall words. Results show slight significant correlations between state of mind, tempo of music and memory.

6 HOW COLORING AND DRAWING AFFECT A PERSONS MEMORY

Tamara Bridgham (Dr. Patricia O'Neill, Dept. of Psychology)

This research investigated how coloring affects a person's memory and imagination. Thirty Western Connecticut State University students participated in this experiment. Participants either created their own figure of a dog, or colored in an already created figure of a dog. Both groups of participants then read and answered questions about the same paragraph. The results of this experiment indicate no significant difference between the two groups.

7 COLLEGE STUDENTS' KNOWLEDGE & USE OF OVER-THE-COUNTER MEDICATIONS

Sara Brierley (Dr. Patricia O'Neill, Dept. of Psychology)

Over-the-Counter Medications (OTC) are believed to be safe but, for consumers lacking appropriate knowledge, medical emergencies can arise. This study was conducted to determine college students' use of and knowledge regarding OTC medications. The participants were 40 college students who completed a survey containing 15 demographic questions and 10 OTC medication knowledge questions. A correlational analysis was conducted. There was no significant correlation between demographics and medication knowledge. However, there was a significant correlation between participants' perception of what was of most importance on medication label and medication knowledge.

8 EXAM FORMAT IN RECALL: IS THERE A DIFFERENCE?

Matthew Calvanese (Dr. Patricia O'Neil, Dept. of Psychology)

Educators have long argued over exam format and its relevance to information recall. Thirty-two students read a short article and answered a 10-item factual questionnaire that was presented in either multiple choice, true/false, or short answer format. An independent group's ANOVA showed that those individuals who completed the short answer questionnaire recalled significantly less from the article than individuals who completed the multiple choice and true/false formats. Better performance on the true/false and multiple choice formats could be explained by the increased probability of a correct answer over the short answer format. Implications for college teaching are discussed.

9 THE RELATIONSHIP BETWEEN PRACTICE AND REACTION TIME.

Jen Caroti, Kristin Catalano, Marianne Baboo (Dr. Robin Flanagan, Dept. of Psychology)

Reaction time has been shown to change with practice. In this experiment, participants were asked to play a computer game that they had never seen before. The first three trials were averaged together and the last three trials were averaged together and then compared to each other. The results from a paired sample t-test showed that there is a significant difference between the two variables, $t(20)=-6.858$, $p < 0.05$.

10 MEMORY RECALL FOR ONE OR TWO COLUMN DATA

Winnie Chau, Kaity Mack & Melissa Diacri (Dr. Robin Flanagan, Dept. of Psychology)

This study was performed to identify whether memory recall is better when objects are viewed in either a one-column or a two-column format. We hypothesized that participants would recall more data when they viewed the one column format. Participants were randomly assigned to either the control group or experimental group. Both groups viewed the same sized sheets of paper with the same icons. The experimental group was shown the icons in a one-column format. Our study concluded that there was no significant difference between the control and experimental groups, $t(18) = -1.460$, $p > 0.05$.

11 LASER FLASH PHOTOLYSIS OF PORPHYRIN MOLECULES

Saief Chowdhury (Dr. Russ Selzer, Dept. of Chemistry)

Laser flash photolysis is a technique used to study chemical events that occur on a microsecond time scale. We used this method to explore the photophysics and photochemistry of porphyrinic molecules. Specifically, water-soluble tetraphenylporphine and tetraphenylbacteriochlorin are evaluated. The porphine compound is reduced with hydrazine and hydrogen peroxide to form the bacteriochlorin. Triplet spectra and excited-state kinetics were obtained using a Nd-YAG laser.

12 THE INFLUENCE OF IMAGES ON BODY ESTEEM

Kim Crayco (Dr. Mary Nelson, Dept. of Psychology)

The current societal standard of attractiveness is one that emphasizes beauty by size and weight. Previous literature has shown that exposure to the thin ideal tends to reduce satisfaction and self-esteem. Thirty WCSU students viewed a slide show of either models or fish and subsequently filled out the Body-Esteem Scale (Franzoi & Shields, 1984). The viewing of models was supposed to negatively impact the person's perception of their body image. Preliminary results indicate no significant effects for males but sexual attractiveness and weight concerns were significantly different for females as a function of the type of slide show viewed.

13 THE EFFECT OF A PERSUASIVE NEWSPAPER ARTICLE ON EXERCISE MOTIVATION AND SELF-EFFICACY

Daniel Cunningham (Dr. Mary Nelson, Dept. of Psychology)

Previous research has shown exercise motivation can be influenced by persuasive messages such as reduced cancer risk. Fifty-six university students were tested to determine if exercise motivation could be increased by a newspaper article describing the beneficial effects of exercise on cancer. The controls were a neutral article group and a no article group. Everyone, including the no article group, answered an efficacy standardized questionnaire. The results did not corroborate previous research. Reasons for the treatment not affecting self-efficacy and suggestions for future studies are discussed.

14 GENDER AND ATTITUDES TOWARDS EXERCISE

Laura Daley (Dr. Patricia O'Neil, Dept. of Psychology)

This experiment investigated the relationship between gender and attitudes towards exercise. Participants filled out questionnaires that measured the participants' self-reported exercise activity, and attitude toward exercise. The preliminary results indicate males and females had similar self reported exercise activity and attitudes toward exercise. These results are different from previous studies that show that males report higher levels of exercise, while females have more positive attitudes towards exercise than males.

15 DO STUDENTS HAVE INCREASED TASK EFFICIENCY WITH TEXT OR DIAGRAM INSTRUCTIONS?

Bethany R. Danburg (Dr. Patricia O'Neil, Dept. of Psychology)

College instruction is typically textual in nature (e.g. textbooks). Students may learn and produce information at a quicker rate if schools increase their use of hands-on and diagrammatic instructions. In this research, task efficiency is used to measure the effect of diagram versus text based instructions. Preliminary results indicate that tasks are completed correctly in less time when participants use diagram instructions compared to text instructions. Further research on instruction type is needed to determine if diagrams increase task efficiency.

16 A NEW INVESTIGATION OF AGE GROUP BIASES

Jonathan Dator and Elianna Santiago (Dr. Mary Nelson, Dept. of Psychology)

Labels are known to support biases in every facet of life. Advertisers and marketers are aware of the biases that a label can produce. In this study, labels and biases were re-examined. College students were randomly assigned to one of three "label" conditions (the average 21-year-old, a person confined to a wheelchair, and a person diagnosed with ADHD). Initial results showed a non-significant bias regarding the disability label. However, significant biases did appear among different age groups. Future research may determine why older participants were more favorable to working with a student labeled as having a disability.

17 IMMUNOLOGICAL STUDIES OF GAP JUNCTION PROTEINS IN PLANARIA

Maria M. Davidson (Dr. Susan M. Maskel, Dept. of Biology)

Some cells in vertebrates are connected by and communicate with each other through gap junctions. The type and number of proteins making up vertebrate gap junctions vary in normal tissue and healing wounds. To help determine if similar differences are seen in invertebrate gap junction proteins, immunofluorescence and immunohistochemical staining were used to study these proteins in regenerating and non-regenerating planaria. Results indicate that such differences do occur and support a role for gap junction proteins in planarian regeneration.

18 TAXATION OF UNREPORTED INCOME FROM FRAUDULANT ACTIVITIES

Stevan Deura (Dr. Michele Ganon, Dept. of Accounting)

The taxpayer has unreported income from an S corporation in which he was a part owner. He asks whether the income could be considered return of principal, and if not, would he be subject to any penalties. Research concludes that due to the corporation not filing their own tax returns for the years in question, the taxpayer's basis in the corporation is unknown, so this income cannot be considered return of principal. The taxpayer is also subject to self-employment taxes for a portion of the unreported income, as well as failure to file penalties.

19 THE EFFECTS OF NOTE TAKING AND MENTAL REHEARSAL ON MEMORY

Sharon DeWitt (Dr. Patricia O'Neil, Dept. of Psychology)

This study examines the effects of the use of two memory aids, note taking and mental rehearsal, on memory. Thirty-four college students were assigned to either take notes on or think about words and ideas that would help them to remember a list of words that they were then asked to recall. Participants who used mental rehearsal recalled significantly more words than participants who used note taking. The results suggest that mental rehearsal is a more effective memory aid than note taking. Mental rehearsal requires continual thinking, which may allow information to be processed more effectively.

20 ANALYSIS OF TRACE HEAVY METALS IN GREEN TEA USING INDUCTIVELY-COUPLED PLASMA OPTICAL EMISSION SPECTROSCOPY (ICPOES)

Ibrahim Diwan (Dr. Yuan Mei-Ratliff, Dept. of Chemistry)

Green teas have become a popular beverage in recent years due to their many health benefits. The market for imported green tea has experienced steady growth into a multi-million dollar business. Concerns have also risen about possible contamination in imported green teas by heavy metals such as lead (Pb) and cadmium (Cd). A method that uses a sophisticated ICP-OES instrument to determine the concentration of Pb and Cd in trace amounts has been developed in our laboratory. Results of its application to various green tea samples to help ascertain possible contamination will be presented.

21 ANALYSIS OF THE LIGHT VARIATIONS IN VERY CLOSE ECLIPSING BINARY STARS

Kenneth Gardner, Brian Bartolo, Kris Sullivan, Gale Alexander, Kerry Perrotta (Dr. Dennis W. Dawson,

In the class of eclipsing binary stars called contact systems, the stars are nearly touching and orbit around each other in seven or eight hours. The stars share atmospheres, and gases can flow between them either continuously or in bursts. We are obtaining time sequences of images for one such contact system, using the CCD camera of the 20-inch WCSU Observatory telescope in order to identify orbital period shifts, the presence of star spots, and other interesting physical changes in these systems. Our observations will be used to construct numerical models of the binaries using Binary Maker 3.0.

22 DOES REWARD EFFECT CREATIVITY?

Patricia Garrity (Dr. Patricia O'Neil, Dept. of Psychology)

This study investigates whether rewards affect creativity. Twenty-seven participants from Western Connecticut State University were randomly assigned to one of three groups. All groups performed a timed creativity task. Group one received no reward. Group two was promised a visible reward upon completion of the creativity task. Group three was promised a reward that was not visible to the participant until completion of the task. Preliminary results show that reward does not affect creativity responses. Further research could investigate how reward could maximize creativity.

23 THE EFFECT OF MUSIC ON PRODUCTIVITY

Elyse Hansen (Dr. Patricia O'Neill, Dept. of Psychology)

This experiment determined whether music has an effect on productivity. Thirty students from Western Connecticut State University were randomly assigned to three groups. Participants were given five minutes to complete a Sudoku puzzle in silence and then five minutes to complete another Sudoku puzzle while listening to fast beat, slow beat, or no music. Preliminary research shows that there is no difference between fast or slow music, yet the silence condition produced a greater increase in correct answers on the second puzzle. Preliminary results indicate that music may be distracting and cause a decrease in the score.

24 THE RELATIONSHIP BETWEEN CAFFEINE AND REACTION TIME: EXAMINING THE UNDERGRADUATE POPULATION

Shannon B. Healy, Jillian P. Hettinger, Brittany M. Vilardo (Dr. Robin Flanagan, Dept. of Psychology)

The main purpose of this study was to determine whether the consumption of 45.6 mg of caffeine in a 12 oz cup of Diet Coke would produce a significantly faster reaction time, measured by a CogLab Stroop test. This is compared to the Stroop test reaction times of the participants who consumed 12 ounces of caffeine-free Diet Coke. Participants (n=48) were assigned to one of these two groups, and upon finishing the 12 oz beverage they completed the CogLab Stroop test. The results indicated that caffeine did not significantly increase the participants reaction times.

25 ANTITRUST LITIGATION FEES: TO EXPENSE OR CAPITALIZE?

Amy Horrigan (Dr. Michele Ganon, Dept. of Accounting)

The taxpayer would like to expense all legal fees incurred in the defense of an antitrust suit brought by the State of Texas for an asset acquisition merger approved by the FTC and legally completed. Under Sec. 162 litigation costs can only be expensed when they are in defense of the business or its policies. Research concluded that the costs must be capitalized under Sec. 263 as acquisition costs. The legal completion of the merger was one in form only and was not sufficient to prove defense of business. Traditional legal methods were used to perform the research.

26 DETERMINATION OF QUALIFIED TRAVEL AND BUSINESS EXPENSES

Brian Kersten (Dr. Michele Ganon, Dept. of Accounting)

During the taxable year, the taxpayers purchased a travel agency corporation (Travel Mavens) and claimed to be employees of the company regardless of the fact that they did not receive a salary. Due to their claimed status, the taxpayers declared a myriad of personal travel and business deductions on their returns based on the array of work performed on behalf of their company. My research shows that the taxpayers are required to make a profit in order to be considered employees of Travel Mavens, and therefore, they cannot claim personal travel and business deductions.

27 THE EFFECTS OF PRESENTATION STYLE

Melissa Labozzetta (Dr. Patricia O'Neill, Dept. of Psychology)

This study investigated how the effects of presentation style influenced how well nutritional information was understood, remembered, and how presentation affects food choices. Twenty-six Western Connecticut State University students participated in this study. The participants were presented with nutritional information in three different ways. Following the presentation, participants received an eight-item questionnaire regarding the information. Preliminary results indicate that presentation style affected neither performance on the questionnaire nor participants' food choices. Future research should investigate the effects of presentation style on long term eating behaviors and whether or not one presentation style is preferred over another.

28 INCREASED ALCOHOL USE HAS A NEGATIVE EFFECT ON COLLEGE STUDENTS' ABILITY TO MAKE WISE DECISIONS

Sara Leo (Dr. Robin Flanagan, Dept. of Psychology)

A survey was taken at Western Connecticut State University in 2004 on the week of March 1st through the 12th. Approximately 992 surveys were completed by the students attending the university. I found there was a significant relationship between binge drinking and making bad decisions ($r=.478$, $P<.001$). What I mean by making bad decisions is: been in trouble with police, residence hall, or other college authorities, damaged property, pulled the fire alarm, got into an argument or fight, driven a car while under the influence, been arrested for DWI/DUI, and been hurt or injured while under the influence.

29 CREATING FALSE MEMORIES THROUGH WORD LISTS

Aubrey List (Dr. Mary Nelson, Dept. of Psychology)

Being that memory is associative, previous studies have shown that "recall" is better when the list of items is highly associated rather than unrelated. This study extends prior research by focusing on type of recall task and improvement over time. Participants listened to a list of 14 associated items and were asked to engage in a free recall task or a recognition task. This process was repeated with three lists of correlated items. Preliminary results show that the free recall task significantly improved over the course of the three trials compared to the recognition task.

30 THE INFLUENCE OF TIME CONSTRAINTS ON DIRECTION SKILLS

Ashley Ludwig (Dr. Mary Nelson, Dept. of Psychology)

Direction-following skills were evaluated on twenty male and female college students at random. Participants executed their skills by reading over all directions before completing the questionnaire. If done correctly, no answers should have been completed. A time constraint of three minutes was placed on one group of ten participants to see if they would feel rushed. A Chi-Square Test showed that there was not a statistically significant difference between the two groups, but on average college students as a whole do not follow directions properly. Future research containing a larger sample size might impact the differences between the groups significantly.

31 TASTE THE DIFFERENCE

Ken Lyke (Dr. Mary Nelson, Dept. of Psychology)

People claim to have preferences for bottled water brands. To evaluate the basis for this claim, 26 college students selected one cup of water from a table of cups equally representing two brands. After tasting the water, the students were asked to identify the brand of water. A Chi Square analysis provided support for the hypothesis that people can indeed identify a bottled water sample by tasting the sample. Gender and class differences are also discussed.

32 PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT

Betsy Lynch (Dr. John R. Coleman, Dept. of Management)

A program was developed for an Emergency Department of an acute care hospital that is specific to pain management for patients receiving care. The goal of the research project was to determine the effects of patient education relative to pain control as perceived by the patient. It was shown to have an initial positive impact on patient perception through patient surveys.

33 ASSESSMENT OF STUDENT ATTITUDES TOWARD ENVIRONMENT

Jennifer Mancuso (Dr. Mary Nelson, Dept. of Psychology)

Twenty-four WCSU students participated in a study assessing student attitudes toward the environment. Students were randomly assigned to one of two passages that explained harms to the environment: a factual or an emotionally charged passage. Subsequently, the subjects answered a subset of eleven questions pertaining only to Environmental Adaptation. The researcher hypothesized that the students assigned to the emotionally charged passage would be less likely to agree with adapting the environment to suit the needs of humans. The group assigned the emotionally charged passage did not score differently from those who read the factual passage, thereby failing to provide support for the hypothesis.

34 EFFECT OF NURSE EXTERN PROGRAMS ON JOB SATISFACTION OF REGISTERED NURSES

Becky E. Mathews (Karen Daley, Dept. of Nursing)

With the predicted nursing shortage by year 2020, strategies to mitigate the shortage have become of high importance. Nurse extern programs are shadow opportunities given to senior nursing students in preparation of transition to the role of practicing, professional, registered nurse. These programs can be costly for organizations to participate in, but if they lead to lower turnover rates, they become well worth it in the end. In this thesis proposal, data will be collected in regard to job satisfaction of registered nurses using the McCloskey/Mueller Satisfaction Scale and then compared to nurses' participation in these programs.

35 SPATIAL REASONING

Joann Mennillo (Dr. Patricia O'Neil, Dept. of Psychology)

Inspired by previous research on spatial reasoning skills, I conducted an experiment. The experiment tested the spatial reasoning skills of twenty male and twenty female Western Connecticut State University students using a survey. Half of each gender was given a practice worksheet to complete and review before completing a test worksheet, while the other half was given only a test worksheet. Results from a One-Way Between Groups ANOVA show no significant differences, regardless of: gender versus spatial reasoning scores, direction type versus spatial reasoning scores, or the combination of gender and direction type scores.

36 VOICE RANGE AND INFORMATION RETENTION

Heidi Miedema (Dr. Mary Nelson, Dept. of Psychology)

The tone and pitch of a voice can influence the amount of information that is retained. To test this idea, participants listened to a recorded two minute recorded passage. Three randomly formed groups of subjects each heard the same story presented in one of three tones: monotone, excited-high pitch, or average tone. Following the recording, participants rated the extent to which the tone of voice helped them retain the information that was read or whether it interfered with their processing. Preliminary analyses support the researcher's hypothesis.

37 STUDIES ON THE COORDINATE REGULATION OF TRP ION CHANNELS AND BRADYKININ RECEPTORS

Robert Miller (Dr. Jennifer Frederick, Dept. of Chemistry)

The transient receptor potential (TRP) protein superfamily comprises channels mediating sensory responses to diverse stimuli. Previous research suggests a functional relationship between TRP ion channels and bradykinin (BK) receptors, both of which play a role in pain, inflammation, and heat sensation. This research seeks to address whether TRP ion channels and bradykinin receptors are coordinately regulated in rat. RNA was isolated from a rat chronic inflammation model, and RT-PCR was used to determine relative expression levels of a TRP ion channel and BK receptors. Effects of painful stimuli on relative expression levels of these genes are compared.

38 TAX IMPLICATIONS OF ORDINARY EXPENSES INVOLVED IN A HOSTILE V. FRIENDLY TAKEOVER OF A CORPORATION

Richard Minto (Dr. Michele Ganon, Dept. of Accounting)

Taxpayer was involved in a takeover by a foreign corporation. Taxpayer incurred professional fees during the friendly takeover and wanted to know if the business was able to deduct the fees incurred as ordinary expenses. Due to the nature of the transaction, Taxpayer was not able to deduct professional fees (ordinary expenses) in the year incurred but was able to capitalize expenses and deduct them in future years.

39 DISTRACTION AND THE ACCURACY OF CHANGE DETECTION

Marsha Murray, Taisha Rivera and Diana Torres (Dr. Robin Flanagan, Dept. of Psychology)

This study set out to identify college students' effectiveness of change detection (paying attention) as a result of different distractions present in a classroom setting. This research proposed that systematically manipulating distractions would result in a difference in the amount of information processed. All participants were randomly assigned to a condition of distractions or no distractions. Participants then screened images and were instructed to report changes. Many studies have shown distractions interfere with attention performance; however, results from this research did not reveal a significant difference.

40 PERCEPTION OF BODY IMAGE

Stephanie Nunes (Dr. Mary Nelson, Dept. of Psychology)

Previous research has shown that viewing models changes the body image assessment scores of both males and females. Thirty-six males and females were randomly assigned to one of two groups: a slideshow of 10 pictures of male and female models (n=20) or of 10 flowers (n=16). After viewing the slideshow each student responded to a body image assessment. The assessment score for models was 8.90 as compared to 11.81 for flowers. A t test for independence did not reveal any significant difference between these scores. The lack of significant findings may be attributable to the small sample.

41 COOLING FINS: NUMERICAL ANALYSIS OF THE SHAPE DESIGN

Paul O'Brian (Dr. Lydia Novozhilova, Dept. of Mathematics)

Cooling fins are used for convective removal of heat from sources like a computer chip, a gasoline engine, or a transformer on a power line. In this research, performance characteristics of various cooling fin designs were analyzed. Methods of numerical analysis implemented using CAS Maple were used for solving appropriate boundary value problems that models the heat diffusion process. Multi-dimensional analysis and shape optimization based on more advanced mathematical tools can be done in the future.

42 BUILT-IN GAINS FOR AN S CORPORATION RECEIVING

Amy Partrick (Dr. Michele Ganon, Dept. of Accounting)

An S (former C) Corporation claimed installment payments as capital gains not subject to built-in gains taxes for tax years 1994, 1995 & 1996. An IRS audit determined that, under section 1374, the S corporation owed taxes on built-in gains back to 1991. Traditional legal tax research showed that the IRS was able to overcome the S Corporation's claim that the statute of limitations had run out on tax year 1996 - based on a shareholder agreement to extend the statute of limitations and the IRS' own error in following unified audit procedure process.

43 TITLE TERRITORIAL DEFENSE IN PARKING LOTS

Jenna Rao (Dr. Patricia O'Neill, Dept. of Psychology)

Research has shown that people defend their territory, even if the territory they are defending is a public parking space. This study examined if people are territorial in parking lots and whether men or women take longer to back out of parking spaces. In this study, forty participants were observed for two consecutive Saturdays while backing out of their parking space in the parking lot of Costco in Brookfield, Connecticut. Preliminary results indicate that women take longer to back out of a parking space when a car is waiting.

44 PRELIMINARY STUDIES OF PESTICIDE DETECTION IN GREEN TEAS BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS)

Emily Retter (Dr. Yuan Mei-Ratliff, Dept. of Chemistry)

With the growth of the unregulated imported green tea market in recent years also comes a growing concern for possible contamination in imported green teas by pesticide residues. A literature-search based student independent study project has been carried out in search of suitable methods for detecting pesticide residues in foodstuffs. The findings of this project will serve as a guide to design an analytical method in our laboratory that will be used for detecting possible pesticide contaminations in imported green tea samples available in local stores.

45 THE EFFECTS OF STRESS AND SOLVING MATH PROBLEMS

Stacey Rivera (Dr. Patricia O'Neill, Dept. of Psychology)

This experiment investigated the effects of stress and math problems. Forty eight participants from Western Connecticut State University solved math problems under one of four conditions: no time limit and no music; time limit and music; music only; and time only. Time limits and music were used to induce stress on the participants. Participants answered a questionnaire before and after the math test. Results revealed significant differences between the four groups. The level of stress can affect students' test performance.

46 THE RELATIONSHIP BETWEEN SYMMETRY AND FACIAL ATTRACTIVENES

Jaclyn Rose, Lauren Hambidge, Diana Lock (Dr. Robin Flanagan, Dept. of Psychology)

Research has shown that there is a relationship between symmetry and facial attractiveness. This study examined the rated level of attractiveness on faces that were shown as symmetrical and asymmetrical. Due to conflicting past research the purpose of this study was to determine the direction of this relationship. The participants, consisting of undergraduate college students, rated six pictures on a scale of one to five. The results showed that there was a significant difference in rated attractiveness of symmetrical versus asymmetrical faces. Asymmetrical faces were found to be more attractive than symmetrical representations of the same face.

47 WATER SURFACE TEMPERATURE MEASUREMENT USING REMOTE SENSING TECHNOLOGY

Joseph Roy (Dr. James Boyle, Dept. of Physics and Meteorology)

Sea surface temperature (SST) influences the exchange of latent heat, sensible heat and longwave (infrared) radiation between the atmosphere and oceans. The Infrared Radiation Pyrometer (IRP) is an instrument which remotely measures SST by detecting radiation emitted from the water surface. It yields more accurate surface temperature measurements than probe-type thermometers. We present IRP measurements of SST during a variety of simulated ocean conditions at a NASA wave tank. In addition, preliminary results from a rooftop tank experiment using a pair of IRP's (one aimed at the water and another at the sky for accurate outdoor measurements) will be presented.

48 HOW DO WE LEARN THE BEST?

Lindsay Ruta (Dr. Patricia O'Neill, Dept. of Psychology)

This study investigated how students learned the best. The participants were Western Connecticut State University students. Participants either listened to ten words, or were presented with a series of pictures that conveyed the same concepts as the ten words. Then they were presented with a word bank that had the ten words they saw or heard and ten additional words. The participants were asked to circle the words they remembered from the presentation. The results showed no significant difference.

49 MOZART EFFECT REVISITED AND CLARIFIED

Elianna Santiago (Dr. Mary Nelson, Dept. of Psychology)

The Mozart Effect, as originally studied, is limited to spatial-temporal tasks involving mental imagery and temporal ordering. In this research, participants were randomly assigned to one of three music conditions (no music, instrumental, or vocal) and required to complete Sudoku, logic-based placement puzzles. Preliminary results indicate that listening to classical music with vocals, when paired with previous experience solving Sudoku puzzles, yielded the highest number of correct placements. Further research is needed to isolate the variables that affect participants' ability to complete these puzzles.

50 SIMULATED INTOXICATION AND REACTION TIME

Amy M. Serino (Dr. Mary Nelson, Dept. of Psychology)

Simulated intoxication significantly affects a person's reaction time. Twenty two participants took part in an experiment which measured reaction time with either simulated intoxication goggles or non-simulation goggles. The reaction time was tested by having a red stimulus appear on the screen in a traditional (matching arrow direction) or non-traditional (not matching the arrow direction) manner. The results of this study provide support for the hypothesis that simulated intoxication significantly impairs an individual's reaction time. Implications will be discussed.

51 AUTHOR'S EDUCATIONAL BACKGROUND IMPACTS GRAMMATICAL SCRUTINIZATION

Heather Serphillips (Dr. Mary Nelson, Dept. of Psychology)

When someone reads a passage they may or may not take into account the author's educational background. Participants were asked to identify the grammatical errors in a passage, and rate their comprehension of the passage. The author of the passage was described as a male high school student, a male with a bachelor's degree, a male with a master's degree, or an anonymous source. Initial analysis of the data suggests that there is support for the researcher's hypothesis that the author's educational background impacts the reader's ability to detect grammatical errors.

52 THE EFFECT OF EXTRINSICALLY MOTIVATIONAL STIMULI ON THE PERSISTENCE OF NEW LEARNERS

Laura Skrip (Dr. Patricia O'Neill, Dept. of Psychology)

This study investigated the relationship between motivational stimuli and persistence in a learning environment. Female students from Western Connecticut State University participated. Participants viewed computer-based tutorials and practice sessions; the tutorials varied only in whether or not they contained visual representations of the International Affective Picture System's (IAPS) stimulus categories. A preliminary analysis indicates that exposure to cognitively arousing imagery is associated with an increased time investment when practicing a new concept. These results may provide insight into more effective teaching and learning styles.

53 IMPACT OF DISTRIBUTING WRITTEN MATERIAL TO FAMILIES ABOUT PEDIATRIC PREOPERATIVE TOURS

Donna Stein (Pat Lund, Dept. of Nursing)

Pediatric preoperative tours are the standard of care for children undergoing surgery. The benefits of these tours are well accepted and are an important piece in patient education. The purpose of this study was to attract more families to these tours in a community hospital. An invitation was designed to be easy to read, informative and to elicit a response. The invitations were distributed to offices that schedule pediatric surgery with instructions to give them to a family at the time a child is scheduled for surgery. Over a four month period the invitations brought in 3% more families in the same period than in previous years.

54 MEMORIZE THIS

Jennifer Strohmeyer (Dr. Mary Nelson, Dept. of Psychology)

This study examined the idea that students are more capable of storing and recalling information which is related than information which is not. Each participant was a WCSU student and was presented with four groups of words and four groups of objects with half the groups of each stimulus being related to one another. After each group was briefly displayed, the students recorded as many words or objects they could recall. The results show better recall for the associated than non-associated items, thereby supporting the researcher's hypothesis. As many of the recalled items were not in the original presentation, these findings may have implications for false memory research.

55 TAXPAYER ACQUIRED THE TWIN CITIES BANK'S ASSETS

Yujian Sun (Dr. Michele Ganon, Dept. of Accounting)

Taxpayer was concerned with how to define the deposit base and decide what the limited useful life of the core deposit was. The core deposit had an ascertainable basis, apart from goodwill and going-concern value, and had limited useful life and its categorization. The core deposit had an intangible asset and the cost saving method to value the core deposit intangible was very reasonable. Straight line or accelerated method both can used to amortize the deposit core.

56 ANXIETY AND TEST TAKING

Shannon Tunick (Dr. Patricia O'Neill, Dept. of Psychology)

In this experiment, the effects of anxiety on test taking were explored. The purpose was to find out if anxiety had an effect on test taking. Participants were WCSU students over the age of 18. They were given 3 minutes, 5 minutes, 10 minutes, or and unlimited amount of time to complete a test. After completing the test, they were asked to fill out a questionnaire assessing how anxious the test made them. Preliminary results show that less anxious students did much better on the test than students who were very anxious.

57 MODALITY AND FALSE MEMORY

Christa I. Van Buskirk (Dr. Patricia O'Neill, Dept. of Psychology)

The present study investigated the effects of modality on false memory. It was hypothesized that an auditory format would produce a greater incidence of false memory than a visual format. Undergraduate WCSU students either viewed a set of word lists on a Power Point presentation or listened to the same word lists on tape. Each list was followed by a two minute recognition task. Preliminary results reveal there are no significant differences in recognition between the two modalities, and further research is needed.

58 GROSS INCOME VS. CAPITAL CONTRIBUTION OR LOAN

Elizabeth Villalona (Dr. Michele Ganon, Dept. of Accounting)

This tax research clarifies what should be considered "gross income" according to the Internal Revenue Code. In S. Corporation's 1987 Tax Return, they included advances made by C. Corporation in exchange for services rendered. The IRS disagreed and reclassified the funds as either capital contribution or loans. This created a tax deficiency to the Corporation and the shareholders who received dividends payout. Research into the tax law verifies that advances for service rendered are considered gross income. This result derived from the fact that under Reg §1.61-1 gross income is defined as all income from whatever source derived.

59 THE RELATIONSHIP BETWEEN ALTRUISM AND KIN SELECTION: EXAMINING THE UNDERGRADUATE POPULATION

Jessica M. Ward (Dr. Patricia O'Neill, Dept. of Psychology)

This questionnaire study examined the relationship between helping behavior and genetic relatedness. Forty-one WCSU students participated and were asked to complete a questionnaire measuring their willingness to directly or indirectly help persons in need. Beneficiaries varied in terms of genetic relatedness to the participants. The results indicate that the more genetically related an individual in need of help is to the participant, the more willing the participant is to help.

60 COORDINATION CHEMISTRY OF DIVALENT GROUP 12 THIOCYANATE COMPLEXES CONTAINING 4-BROMOPYRAZOLE

Carl Willman (Dr. Paula Secondo, Dept. of Psychology)

$Zn(NCS)_2(4\text{-bromopyrazole})_2$ and $[Cd(NCS)_2(4\text{-bromopyrazole})_2]_n$ have been prepared. Molecular composition and geometry have been investigated using elemental analysis, 1H NMR and FT-IR. Thiocyanate (NCS-) mode of coordination has been determined using specific mid- and far-range IR vibrational frequencies (ν CN, δ NCS, ν CS, ν M-N and ν M-S). Structural determination for the cadmium analog has been confirmed using X-ray crystallography.

61 DETERMINATION OF AMYL ALCOHOL CONTENT IN VARIOUS SPIRITS USING CAPILLARY GAS CHROMATOGRAPHY

Gerald Zabawa (Dr. Yuan Mei-Ratliff, Dept. of Chemistry)

The distilled spirits industry has long justified the high cost of premium brands by the claim that they contain low levels of amyl alcohol. Amyl alcohols are byproducts of the distillation process that contribute to the "burning" flavor associated with the poor quality of certain brands. A student research project was designed to put this claim to the test where a capillary gas chromatograph instrument was employed to determine the level of amyl alcohol in various brands of distilled spirits. Experimental results including analytical method development and real sample analysis data will be presented.

62 THE REFCO ACCOUNTING SCANDAL

Claire Zimmerman (Dr. James Donegan, Dept. of Accounting)

On August 12, 2005, Refco, Inc. a New York based brokerage firm, made an initial offering of 26.5 million shares of its stock on the NY Stock Exchange. By October 16, 2005 the company was facing bankruptcy in the wake of the discovery of a multi-year fraud perpetrated by Refco's elegant, Cambridge-educated CEO, Phillip Bennett. How could Mr. Bennett become embroiled in such a scandal? Using self-control theory as a basis for analysis, Bennett's actions seem to be explained by low-self control intersecting with a financial crisis that could be solved by fraud.

Seminar Presentations

listed in alphabetical order by first author

63 IMPLEMENTATION OF A PHARMACY AUTOMATION SYSTEM (ROBOTICS) TO ENSURE MEDICATION SAFETY AT NORWALK HOSPITAL

Robert J. Bepko and John R. Moore (Dr. John R. Coleman, Dept. of Management)

Norwalk Hospital - a private, not-for-profit, voluntary acute care community hospital located in Fairfield County, Connecticut - implemented the use of pharmacy robotics in June 2005. This patient safety initiative has significantly reduced the number of medication errors within the pharmacy. The goal of the hospital is to incorporate this technology along with computerized physician order entry and point-of-care medication barcode technology to guarantee that all its patients receive the five rights of safe medication administration.

64 DO NOT WEEP

Stephanie Biello (Kevin Jay Isaacs, Dept. of Music)

This presentation is the history, process, and aesthetic sensibilities of the unaccompanied choral work, "Do not Weep" by Stephanie Biello, undergraduate student at WCSU. With text by Mary Frye, this choral work represents how death can be sorrowful, yet beautiful. This composition will be performed at WestConn by the Chamber Singers ensemble during its spring concert. Ms. Biello will share the creative process of this composition from the initial selection of the text to the final stages of performance. The form, theme, and construction will also be discussed. Audio recordings of the premiere performance will complete the presentation.

65 EXAMINING THE FACTORS THAT INFLUENCE GRADE POINT AVERAGE IN COLLEGE STUDENTS

Lori Blanchfield (Dr. Patricia O'Neil, Dept. of Psychology)

I explored what factors were correlated with Grade Point Average (GPA) in college students. A sample of 75 undergraduate students at Western Connecticut State University completed a self-report questionnaire that focused on GPA, employment, as well as factors related to employment, family obligations and demographic information. Preliminary results show that GPA is significantly correlated with age, residential status, whether on or off campus and factors related to employment. The results of this investigation provide valuable information about what factors may contribute to or hinder students' academic success in college.

66 QUALIFICATION OF IN-SITU OCEAN SURFACE TEMPERATURE MEASUREMENTS USING INFRARED IMAGERY DURING EXPERIMENTS PERFORMED AT THE NASA AIR-SEA INTERACTION RESEARCH FACILITY

Joseph DePasqua (Dr. James Boyle , Dept. of Physics, Astronomy, & Meteorology)

The Multi-Sensor Float (MSF) is a light, wave-following buoy designed to measure ocean surface temperature for characterization of air/sea heat exchange. A 3rd generation design was tested at a NASA Facility. Experiments were performed under various meteorological and sea state conditions to assess temperature measurement accuracy. We will describe results from an infrared imaging camera showing MSF structure causes a slight depression in surface temperature compared to the overall average surface temperature. We also describe preliminary efforts to develop an algorithm, using other MSF measurements, to correct for this anomaly; thereby enabling MSF designs to support calibration of satellite imagery.

67 SELF IDENTITY AND ITS ROLE IN THE DECISION MAKING PROCESS

Rosa T. Kyek (Dr. Patricia O'Neill, Dept. of Psychology)

An unknown variable, the Self-Identification Factor (i.e. the extent to which an individual can identify or relate to another person) may override the other variables thought to influence suggestions for punishments. Students were asked to decide appropriate punishments for students who had committed plagiarism. Results indicated that attractiveness of the plagiarist and the intentionality of the plagiarism significantly influenced decisions. The results further demonstrated that the degree of self-identification had a significant effect on punishment decisions in that people associated significantly more with the unintentional plagiarist.

68 LINUX PROGRAMMING

Evan Seitz (Dr. Todor Ivanov, Dept. of Computer Science)

Different operating systems provide different toolkits to create programs for them. This study examined the implementations of the two most popular desktop environments available for the GNU/Linux operating system, and their respective application programming interfaces. The K Desktop Environment is written in C++ and was developed using the Qt toolkit, and thus most programs for KDE are written in the same manner. The GNOME desktop environment is written in C using the GTK+ toolkit, as are most GNOME applications. Additional research was done to compare the features of the most popular Open Source licenses.

Seminar & Poster Presentations

listed in alphabetical order by first author

69 IDENTIFICATION OF TRP ION CHANNEL ORTHOLOGS IN NON-MAMMALS

Samantha Smith (Dr. Jennifer Frederick, Dept. of Chemistry)

The transient receptor potential (TRP) protein superfamily comprises a group of non-selective cation channels. These channels act in peripheral and central nervous systems of mammals to mediate various sensory responses. While sensory mechanisms involving TRP ion channels are being broadly characterized in mammals, little research has addressed non-mammals. In this study, RNA isolated from snake tissue is screened for TRP ion channel orthologs. Tissue distribution and sequence alignments between mammalian and non-mammalian TRP channels are analyzed. Since temperature regulation is a key difference between mammals and reptiles, discovery of new TRP orthologs may clarify their role in thermal sensation.

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