

PROGRAM SCHEDULE

MONDAY, MAY 2, 2005

AFTERNOON CONCURRENT SESSIONS

Department (s)	Bldg/Room	Presenter	Presentation Time
ART/COM	PAC A-65 PAC D-3	Tyler Malone (COM)	2:00 p.m.
		Cynthia Keegan (ART)	2:30 p.m.
		Robert T. Alsobrook (ART)	3:00 p.m.
BAD/COM/SOC/ SW/EDU	BAC-44	Clovis Simas (BAD)	2:00 p.m.
		Jill Martin (COM)	2:20 p.m.
		Lana Cosby, Sara Cadden, Koletta Douglas, Megan Johnson, Laurie McEuen, Alisha Reeves, Rachel Ryan, Christen Tucker (SOC)	2:40 p.m.
		Social Welfare Policy Class (SW)	3:00 p.m.
		Amber Dixon, Victoria Shackelford	3:20 p.m.
		Rachel Peterson, Whitney Morreau (SW)	
		Rachel Walker (EDU)	3:40 p.m.
BIO	PAC A-7	Nichole David & Kyle Utley	2:00 p.m.
		Allison Shein	2:20 p.m.
		Lindsey Barnes	2:40 p.m.
		Colin Smith	3:00 p.m.
		Anna Curlee	3:20 p.m.
		Nicole Garber	3:40 p.m.
		Brandon Nelms	4:00 p.m.
CHE/PHY/EGR	PAC A-9	Carolyn Morton (CHE)	2:00 p.m.
		Marianne Barnett (CHE)	2:20 p.m.
		Katherine Ayers (CHE)	2:40 p.m.
		Sarah Perlinger (CHE)	3:00 p.m.
		Brent Jones (CHE)	3:20 p.m.
		Kiera Knappman (CHE)	3:40 p.m.
		Brian A. Taylor (PHY)	4:00 p.m.
		Andy Robinette, Joshua Shrewsberry, Ginger Allen, David Foster (EGR)	4:20 p.m.
		Joshua Shrewsberry, Ginger Allen	4:40 p.m.
		Jeff Whitt, Andy Robinette (EGR)	
CHR	JEN 325	Andrew Helms	2:00 p.m.
		Adam Winters	2:20 p.m.
		Jill Hickman	2:40 p.m.
		Matt Crawford	3:00 p.m.
		Kevin Minister	3:20 p.m.
		Meredith Williams	3:40 p.m.
		Kelly Krebs	4:00 p.m.
		Gregory Poore	4:20 p.m.
DMS	JEN 225	Matt Brubaker (COM)	12:30 p.m.
		Eric Murrell (COM)	1:00 p.m.
		Micah Moyers (COM)	1:30 p.m.
		Trae Cadenhead (COM)	2:00 p.m.
		Brian Joyce (COM)	2:30 p.m.
	JEN 207	Lauren Ormsby (ART)	3:00 p.m.
		Tyler Malone (ART)	3:30 p.m.
		Adam Houston (ART)	4:00 p.m.
		Jonathan Blair (ART)	4:30 p.m.
ENG/TESL	PAC D-53	Marianne Martin (ENG)	2:00 p.m.
		Courtney Braswell (ENG)	2:20 p.m.
		Joshua M. Hall (ENG)	2:40 p.m.
		Michelle Lawrence (ENG)	3:00 p.m.
		Charli Cox (TESL)	3:20 p.m.
		Cam Armstrong (TESL)	3:40 p.m.
		Cindy Harrell (TESL)	4:00 p.m.
	Student Lounge (SUB)	Creative Writing Class (ENG)	4:20 p.m.

Department (s)	Bldg/Room	Presenter	Presentation Time
HIS/PSC	PAC D-54	Adrienne Briles	2:00 p.m.
		Natalie Treece	2:20 p.m.
		Matt Oshel	2:40 p.m.
		Heather Tobe	3:00 p.m.
		Ross Mitchell	3:20 p.m.
		Sharon Hart	3:40 p.m.
IS/LAN	PAC D-52	Stefi Brazzeal (IS)	2:00 p.m.
		Sarah Beth Quinton (IS)	2:20 p.m.
		Erica Rose (IS)	2:40 p.m.
		Stacy Storey (IS)	3:00 p.m.
		Mariann Martin (IS)	3:20 p.m.
		Stacy Storey (LAN)	3:40 p.m.
MAT/CSC	PAC C-17	Charli Cox (LAN)	4:00 p.m.
		Kevin Hieb	1:00 p.m.
		Wayne Campbell	1:30 p.m.
		Daniel Green	2:00 p.m.
		Ryan Gillespie	2:30 p.m.
		Willie George	3:00 p.m.
Poster Presentations	Library	Andrew Skaggs	3:30 p.m.
		Phylis Anyango	4:00 p.m.
		Crystal Gibson	4:30 p.m.
		Kristen Lutrell & Jessica Cherry (EDU)	2-5:00 p.m.
		Amanda McComb, Holly Graves, Jillian Moreland (PSY)	
		Social Welfare Policy Students (SW)	
		Amber Dixon, Whitney Morreau, Rachel Peterson, Victoria Shackleford (SW)	
		Brandon Bailey, Amanda Thedford, Lindsay Laurence (SW)	
		Andrea Hudgins, Heather Coffman, Brittney Street (SW)	
		Annie Ross, Elizabeth Berry, Kathleen Lokey (SW)	
		Carrie Wren, Laurie Shackelford, Laurie McEuen (SW)	
		Misty Greer, Rachel Ruckert, Megan Daily, Meredith Waugh (SW)	
		Sarah Perlinger & Carolyn Morton (CHE)	
		Emily Dayton, Jamie Skirvin & Kerstin Brueck (BIO)	
		Ian Ellis, Tyler Gamble & Benjamin Pham (BIO)	
		Chelsea Mytyk & Merry Hindman (BIO)	
		Justin Hutto & Brent Jones (BIO)	
		Stephanneth Adams & Sheketa Williams (BIO)	
		Kimberly Lindsey & Cara-Anne Phillips (BIO)	

RECEPTION FOR PARTICIPANTS, FACULTY & OUTSIDE GUESTS

Coburn Dining Room

5:00-6:00 p.m.

KEYNOTE ADDRESS: Dr. Steven Garber

“The Wound of Knowledge: On Learning to Feel the World Like God Does”

Coburn Dining Room

5:30-6:00 p.m.

ART

An Artist and a Storyteller

Presenter: Cynthia Keegan

Faculty Advisor: Lee Benson

I love stories. As a child I was an avid reader and I wanted to tell my own stories, but I have never been a writer. I discovered that as an artist I could be a storyteller. Before I could read, I had access to stories through illustration. My work is a form of illustration because it does not alienate someone who has not learned to read art. My desire is to create pieces that cause the viewer to ask questions and to search for understanding. I believe art should be about communication with my audience rather than separating myself from them. I choose to depict the human form because essentially, that is the subject of almost every story. I make work with high narrative content because of my love for stories. I am an artist. I am a storyteller.

Common Grounds

Presenter: Robert T. Alsobrook

Faculty Advisor: Lee Benson

"We sometimes act as if we need not make ourselves *real* students of art just because we say we are Christians. This kind of apathy is dangerous. It will alienate us from our unbelievers in the field of which we have been called." (Unknown Psychologist) We hear the Message over and over again; it is chiseled into our minds and obviously, not yet our hearts. The only reason for me to sculpt is God. No one *needs* art, but art and their artists do need something. Jesus. We as Christians know that. We as Christians also know that Jesus is God and God is Love. Then why such a disoriented art world? It is because the lost artists look at what they have made and treat it as some grandiose creation just as God did His creations. The world of art is, and has been for hundreds of years, merely stuck in this cyclical rotation of searching for the next *new*, the next medium, the reason and answer for life. They have already searched themselves and this is why art has been continuously cold and unable to precede through time. But what is not cold and what will always be is God. What is God? Love. Who will show them Love?

"I will go and be the best artist that I can be" is the mind-set of any artist, as it should be for the Christian artist. But it has only been the best artists who have had something to offer, something new. I as a Christian know this to be Love. I choose not to go to be the greatest artist of all time, but to be the most faithful in the time I have been given.

BUSINESS ADMINISTRATION

Critical Commonalities of the High Performing Church: An Empirical Investigation of the Link Between Church Governance Structure and Market Orientation

Presenter: Clovis Simas

Faculty Advisor: Darin White

Christian church attendance and membership in many countries around the world has flattened or even declined in the past decade. According to researcher George Barna, "The major problem plaguing the Church is its failure to embrace a marketing orientation in what has become a marketing-driven environment." Proponents of the market-driven approach point to the phenomenal growth of churches like Willow Creek Community Church in Illinois, Saddleback Church in California, and the Church at Brook Hills in Alabama. Opponents, however, argue that established business methods are not appropriate for the Church. They fear the ills that often accompany marketing will infect the church. Will the same marketing tools and strategies used in the world of business work in the church environment? And, if a marketing oriented approach is effective, what is the best type of church leadership structure to evoke this type of culture? The authors of this manuscript surveyed several hundred professional church leaders from all across the United States from a wide array of denominations. The results indicate that a fairly large percentage of modern churches have adopted a marketing oriented culture. Most importantly, the results revealed a strong correlation between church performance and market orientation.

BIOLOGY

Assessment of the Health of Four Streams in Hardeman County: A Collaborative Study with the Tennessee Department of Environment and Conservation

Presenters: Nichole David & Kyle Utley

Faculty Advisor: Wayne Wofford

Four tributaries of the Lower Hatchie watershed in Hardeman County, Tennessee were assessed. The streams were as follows: Pleasant Run, Gray, Pinner, Lane Branch. The physical characteristics of the streams were recorded to determine the ability of the streams to support their macroinvertebrate populations. Samples of benthic material were taken at eight locations along the bank of each stream using the Tennessee Department of Environment and

Conservation's (TDEC) Mini-Biorecon protocol. These samples were preserved in 80% ethanol and later the macroinvertebrates were separated from the debris. Then, the macroinvertebrates were classified to the family level. The quality of the streams was based on the number of key indicator orders of macroinvertebrates obtained and the number of individuals within each order. From this information, the streams were classified as fully supporting, partially supporting or ambiguous, or severely impaired. This information will be incorporated into the TDEC database for water quality assessment of Tennessee waters.

The Effect of Sound Type on the Spatial Reasoning Ability of Mice (*Mus musculus*)

Presenter: Allison Shein

Faculty Advisor: Wayne Wofford

It has been speculated that listening to certain types of music by humans can enhance intelligence. This is sometimes called the "Mozart Effect." In an attempt to address this phenomenon, the effect of sound type on the ability of mice to solve spatial reasoning problems was examined. Twenty mice were divided into four groups of five. The four groups were subjected to different sound types: silence, white noise, classical music, and hard rock music. Each mouse was chosen at random and put in a maze with the particular sound type assigned to its group. Six trials were run for all five mice in each group over a span of six weeks. For all groups, the effect of sound type on spatial problem solving skills was analyzed by measuring the average amount of time for each mouse to complete the maze and the average number of dead ends taken by the mouse. The mice in the silent group learned the maze the fastest and turned down the least dead ends. The mice in the white noise group took slightly more time to learn the maze and turned down a few more dead ends. The classical and hard rock groups were inconsistent in learning the maze. In some trials, the mice went through the maze quickly while others averaged long times and a large number of dead ends. Thus, the type of music played did appear to affect the spatial reasoning ability of the mice.

The Effect of Streptomycin on the Growth of Soybeans, *Glycine max*

Presenter: Lindsey Barnes

Faculty Advisor: Wayne Wofford

Recent studies have suggested that antibiotics may impact the growth and development of plants. In this study, the effect of the antibiotic streptomycin on the growth of soybeans, *Glycine max*, was examined. Solutions of 0.01, 0.1 and 1.0 ppt streptomycin were prepared and used to water three flats of fifty soybean plants for four weeks. A fourth flat receiving no antibiotic served as a control. In a second trial, the flats were watered with solutions of 5.0, 10.0, and 20.0 ppt. The height of the plants was measured weekly. There was no noticeable difference in growth at lower concentrations, and while there was an effect on growth at higher concentrations (10.0 and 20.0 ppt) it was not as dramatic as what was expected based on a previous study. These results indicate that further research is necessary in order to better understand the possible effects of streptomycin on soybeans.

The Effects of Aging on the Formation of β -Amyloid Plaques in the Brains of Mice, *Mus musculus*

Presenter: Colin Smith

Faculty Advisor: Wayne Wofford

β -Amyloidosis is a disease characterized by the deposition of amorphous, eosinophilic, predominantly extracellular, material (amyloid) in various body tissues. Amyloid is composed of 95% protein and 5% carbohydrate. β -amyloid plaques have been observed to occur in higher frequency in the brains of victims of Alzheimer's disease. There is disagreement as to whether the plaques somehow damage the brain resulting in the symptoms of Alzheimer's or that the plaques are a secondary result of some primary damage that initiates this disorder. In this study, the effect of aging on the formation of β -amyloid plaques in the brains of mice (*Mus musculus*) will be examined. The brains of mice of several ages from juvenile to adult were removed and preserved in 10% buffered formalin. The brains will be sectioned and stained with alkaline Congo Red. The slides will then be examined by polarized light. The amount of staining will be correlated with the age of the mice.

The Effects of Alcohol and Nicotine on the Heartbeat Rate of *Daphnia Pulex*

Presenter: Anna Curlee

Faculty Advisor: Wayne Wofford

This study was conducted to determine the effects of alcohol and nicotine on the heartbeat rate of *Daphnia pulex*. A stroboscopic method for determining heartbeat rate was determined to be the most accurate method to measure the *Daphnia pulex*'s rapid heart rate. Two experimental groups and one control group,

each containing twelve *Daphnia pulex*, were exposed to solutions with the following concentrations: 10.0 mg/L nicotine and 4% alcohol. A third experimental group was begun; using a solution of 25 mL 8% alcohol and 25 mL 20 mg/L nicotine but was unable to be finished because the species died out. The *Daphnia* were exposed to a solution for approximately 5 minutes prior to observation under the stereo-microscope. The heart rate was then determined by adjusting the stroboscopic frequency until the heart appeared to be paused. Results for all trials showed the average heart rate for the control group, 10 mg/L nicotine, and 4% alcohol were 276.9 beats/min, 345.9 beats/min, and 277.0 beats/min respectively.

The Effects of UV Radiation and Methoprene on the Development of the Leopard Frog, *Rana pipiens*

Presenter: Nicole Garber

Faculty Advisor: Wayne Wofford

Amphibian populations in recent years have begun to decline worldwide and a number of different abnormalities have been observed. Frogs are among the first types of species to suffer from damages caused by environmental degradation, and; therefore, act as biological indicators or sentinels. In this study, the effects of the pesticide methoprene, UV radiation, and the combination of the two were examined to see if any developmental abnormalities would be produced. Tadpoles were exposed to 0.10 ppm methoprene, UV (a minimum of 12 h of exposure of the water to sunlight prior to adding the tadpoles), and a combination of the two. Untreated water was used for the controls. The lengths of ten randomly selected tadpoles were taken from each tank at various time intervals over a four week period and the weights of the tadpoles were taken at the termination of the experiment. No obvious developmental abnormalities were seen. However, the average lengths and weights of the tadpoles exposed to a combination of UV and methoprene were lower than the controls indicating a suppression of growth. These findings substantiate the theory that it is the photolysis products of methoprene that are responsible for the deformities that have been observed in other studies.

The Occurrence of the CCR5-[delta]32 Allele in a Family Group

Presenter: Brandon Nelms

Faculty Advisor: Carol Weaver

A 32 base pair deletion in the CCR5 gene has been linked to resistance of human immunodeficiency virus type 1 (HIV-1). This protective mutation

prevents HIV-1 from entering cells through chemokine receptors. The frequency of the CCR5-Δ32 allele was tested in 21 members of the Nelms' family. The presence of the deletion was examined using polymerase chain reaction (PCR) and gel electrophoresis. From the 21 samples, zero (0%) were homozygous for the mutation, 12 (57.14%) were homozygous for the wild type CCR5 gene, and 7 (33.33%) were heterozygous. Inconclusive results were obtained for the other 2 (9.52%) samples. Although no homozygous mutant genotypes were observed, the occurrence of the heterozygous genotype seems to be unusually high among persons of Nelms' descent.

CHEMISTRY

Comparison of a Rural and Urban Environment

Presenters: Sarah Perlinger & Carolyn Morton

Faculty Advisor: Sally Henrie

A comparative study was conducted on the soil and water of Cypress Grove and a rural farm outside of Jackson, Tennessee. Several analyses were done on the soil samples including trace metal analysis and their organic composition. The findings for each environment were compared to one another. Water studies were also done in which dissolved oxygen, nitrates, pH, temperature, and total dissolved solids, among other studies, were examined in order to compare the two environments to one another. Finally, inferences were made from the comparative studies, regarding the impact of urban development on a lake ecosystem.

Determining Reactivity Ratios of a Silicone Acrylate with Common Monomers

Presenter: Brent Jones

Faculty Advisor: Charles Baldwin

The goal of this project was to determine the reactivity ratios of a linear silicone acrylate with several common monomers. A model copolymerization method was needed first. Because reactivity ratios for the copolymerization of styrene and methyl methacrylate are well documented in the literature, this reaction was chosen as this model reaction. The polymer product from the model copolymer reactions were analyzed with FTIR. The resulting spectra provided data from which the reactivity ratios could be obtained using the copolymerization equation. Varying results were obtained over four trials where samples were rigorously purified by removal of inhibitor using column chromatography, distillation,

and degassing. Reactions were also performed under argon. Acceptable reactivity ratios were not obtained suggesting that the reaction should be performed in a suitable solvent system. Preliminary studies on the silicone acrylate indicate the need for solvated copolymerization as well. In the future, UV-visible and NMR spectroscopy may be used.

Development of a Branched Chiral Selector Sorbent

Presenter: Marianne Barnett

Faculty Advisor: Sally Henrie

A sorbent's ability to separate enantiomeric compounds has been proven to increase if the compound is branched, has long chain lengths, or a high organic moiety. These sorbents have potential uses in chromatographic applications as well as solid phase extractions. In this work, the S-enantiomer of naproxen introduced by William Pirkle was used in making a branched compound attached to a long carbon chain that was bound to a silica-gel base. To synthesize this compound, a bromo-triester was first attached to 3-aminopropyl silica-gel. From there the bromo-triester was converted to a carboxylic acid and then to an alcohol. Once the alcohol was obtained, the naproxen enantiomer was attached to the silica-gel adduct via a Fischer-esterification reaction. The addition was determined to be successful because there was an increase in the weight of the compound. When compared to the initial load of the bromo-triester, the load of the naproxen enantiomer was calculated to be 43.9%.

Investigations into the Role of Silicone Surfactants in Flexible Polyurethane Foams

Presenter: Katherine Ann Ayers

Faculty Advisor: Charles Baldwin

The purpose of this research was to investigate correlation(s) between surfactant structure and good flexible polyurethane foam production. Several silicone surfactants were compared with an industry standard in a typical polyurethane foam formulation. Each formulation was then optimized for those surfactants that performed acceptably in the standard formulation. The structural characteristics of each surfactant were compared to the quality of foam each produced. From this, a correlation model was proposed and tested by predicting the quality of foam produced by surfactants with similar structural designs. In three of four experiments, the model correctly predicted the surfactant behavior. To gain further insight into the role of the surfactants in foam production, a surface tension/surfactant

concentration profile was determined for carefully selected surfactants that had been previously studied. The results suggested a linkage between the surface tension profile of a surfactant and its performance in a polyurethane formulation.

Oligomerization, Polycondensation, and Copolymerization of (L)-Lactic Acid

Presenter: Sarah Perlinger

Faculty Advisor: Charles Baldwin

Owing to the enormous amounts of wastes being discarded in landfills, much attention has been paid to seeking biodegradable substitutes of synthetic and petroleum-based polymers. Aliphatic polyesters have been of great interest because of their ability to degrade into omega hydroxyacids which can typically be metabolized by microorganisms. Poly(lactic acid), an aliphatic polyester, when placed in landfills, degrades into carbon dioxide, water, and minerals, and is currently among the most promising biodegradable polymers. Unfortunately, the current process for making poly(lactic acid) is costly and inefficient. Therefore, producing high molecular weight poly(lactic acid) in a more efficient, cost-effective manner is of primary interest. Furthermore, incorporating the poly(lactic acid) segments into copolymers will not only tailor the polymer properties, but also introduce biodegradability into otherwise non-biodegradable polymers such as poly(propylene oxide). Thus, an investigation on the copolymerization of poly(propylene oxide) with lactic acid, oligomeric or polymeric lactic acid is also of great interest.

Structure and Analysis of a Bis-Oxamide Core Bi-directional Dendrimer Precursor

Presenter: Carolyn Morton

Faculty Advisor: Sally Henrie

In order to understand the nature of a bi-directional dendrimer with a bis-oxamide core and *t*-butyl termini, a crystallographic study of tetra-*t*-butyl 4,4'-[(1,2-dioxo-1,2-ethanediyl)diimino]bis[4-(3-*t*-butoxy-3-oxopropyl)heptanedioate] was completed. The R-value for this structure was 0.034. The bis-oxamide core of this dendrimer was found to be planar, with the arms of the dendrimer seeming to protect this linkage. The crystal structure was found to be triclinic with a space group of $P\bar{1}$. This molecule was compared to the crystallographic structure of bis[dimethyl 4-carboxamido N-4-[(2-methoxycarbonyl) ethyl] heptanedionate], another bi-directional dendrimer with a bis-oxamide core and methyl ester termini. The R-

value for this structure was 0.033. This crystal structure was found to be monoclinic with a space group of $P2_1/c$.

Synthesis and Separation of Boron Nitride Nanotubes

Presenter: Kiera Knappman

Faculty Advisor: Charles Baldwin

Boron nitride (BN) nanotubes are anticipated to exhibit many desirable chemical and physical properties. While carbon nanotubes (CNT) have been widely developed and investigated, little work has been done on boron nitride nanotubes. It is anticipated that BN nanotubes will have many properties similar to carbon nanotubes such as high modulus, and be superior to carbon nanotubes in other ways such as thermal stability. Synthesis of boron nitride nanotubes through a NASA Glenn Research Center developed rapid processing method has been established and applications for this unique material are being investigated. Among the proposed applications are hydrogen fuel storage, oxidation-resistant coatings and super capacitors. In the present research, methods of purifying large quantities of these nanotubes are investigated for practical applications by methods such as acid wash, heavy liquid separation, sonication, column chromatography, and centrifugation.

CHRISTIAN STUDIES

2 Timothy 3:10-17: An Exegesis

Presenter: Andrew Helms

Faculty Advisor: Mark Dubis

In these seven verses from the book of 2 Timothy, the apostle Paul encourages Timothy chiefly by pointing him to two sources of strength: the past life and example of Paul himself, and the reliability of the Scriptures in light of their divine inspiration. He writes because of the overwhelming flood of false teachers that are trying to ensnare the hearts and minds of the Ephesian believers. This paper will examine this particular pericope with regard to historical and literary context, questions relating to language and translation, exegetical differences among commentators, etc., with special concentration on verses 16 and 17. In these verses, the different grammatical options for the translation of the original text will be reviewed, with discussion of the implications of each choice.

The Influence of E. Y. Mullins on the 1925 Baptist Faith and Message Statement

Presenter: Adam Winters

Faculty Advisor: James Patterson

E. Y. Mullins (pastor, writer, seminary president, and SBC president) guided the Southern Baptist Convention to maintain theological orthodoxy against the threat of the liberalism and naturalism of the early twentieth century. Distinctively Baptist in his method, he led the SBC in the formation of the original *Baptist Faith and Message Statement*. Mullins helped articulate a suitable confession of faith for his generation and laid a foundation upon which his successors expanded. However, his doctrine of “soul competency” and his emphasis upon religious experience are thought by some to be the beginning of the pragmatic individualism and doctrinal apathy that have come to plague modern Baptists. The scope of this study is to illuminate Mullins’ understanding of what constitutes a proper Baptist confession of faith and the extent to which his beliefs in “soul competency” and experiential Christianity are evident in the 1925 statement.

The Medicalization of Killing

Presenter: Jill Hickman

Faculty Advisor: David Gushee

A Jew pointed to the chimneys from which human ashes were falling and asked a Nazi physician, “How can you reconcile that with your [Hippocratic] oath as a doctor?” He answered, “Of course I am a doctor and I want to preserve life. And out of respect for human life, I would remove a gangrenous appendix from a diseased body. The Jew is the gangrenous appendix in the body of mankind.” Medicine was created for good, not evil; unfortunately, this was not the case during the Holocaust. Hitler enlisted the entire medical profession, as he did other big businesses, to aid in the Nazi final solution to the Jewish question. How did this happen? Why did doctors get involved with the systematic extermination of an entire race of people? How did medicine start down the slippery slope that ended with the death of 6 million Jews?

Nathanial W. Taylor, Charles G. Finney, and the Second Great Awakening: The Theological Basis for Finney’s New Measures

Presenter: Matt Crawford

Faculty Advisor: Brad Green

The use of the invitation system is considered standard in many evangelical churches today. This was not always the case. The modern form of the invitation

system was popularized by Charles G. Finney toward the end of the Second Great Awakening. Finney is often upheld as the model of a great revivalist, but the theological foundations of his ‘new measures’ are not often considered. Upon examination there is a remarkable similarity between the theologies of Charles G. Finney and Nathaniel Taylor. Taylor, professor at Yale Divinity School during the first half of the nineteenth century, was one of the last great thinkers of the tradition of New England Theology begun by Jonathan Edwards. This paper examines two specific areas of the theologies of these two men, depravity and regeneration, and reveals the connections between Finney’s theology and his new methodology in promoting revivals.

Suffering and Omniscience in the Godhead

Presenters: Kevin Minister

Faculty Advisor: Brad Green

The theology of Jurgen Moltmann explicates a prominent modern doctrine of the passibility of God. The doctrine of the passibility of God advocates that God can be impacted by the affairs of the world and in particular that God suffers concerning the injustice of the present world. Classic Christian orthodoxy traditionally rejects the doctrine of the suffering of God because it concludes that a God who suffers cannot be omniscient. This presentation will detail Moltmann’s doctrine of the suffering of the Godhead and the valuable ethical ramifications which result from this doctrine. The relation of suffering and omniscience in God will be explored in order to find a correlation between suffering and omniscience.

T.F. Torrance’s Trinitarian and Scientific Theology

Presenter: Meredith Williams

Faculty Advisor: Greg Thornbury

Trinitarian theology is currently enjoying a Renaissance in the world of theology. The 20th century displayed the beginnings of such thought with theologians such as Karl Barth and Karl Rahner exploring a theology of the Trinity as a base for the content of their doctrines. This paper will consider one coming behind these men who critically accepted their thought and attempted to construct an evangelical Trinitarian theology in line with the revelation of Scripture: T.F. Torrance. An examination of Torrance’s method and thought including his scientific theological method and an exposition of his Trinitarian theology will be given. This paper will conclude with a few thoughts concerning the applications of these principles for modern day community.

Theology for Life: Insights from John Owen on the Nature of Theology

Presenter: Kelly Krebs

Faculty Advisor: Brad Green

John Owen was one of the most prolific and influential of the seventeenth-century English Puritans. Whether preaching before Parliament or his congregation in the country, serving as chaplain to Oliver Cromwell or vice-chancellor of Oxford, Owen’s outlook on life was conscientiously theological. His theological and practical writings demonstrate a concern for the heart of the gospel and life of meditation on the Word. Owen was a prolific writer, an outstanding preacher, and a godly man. In his *Theologoumena*, Owen fleshes out his approach to theology. This work, as well as his other writings, offers a helpful look into how theology should be done in reference to life and how life should be lived in light of theology. This paper will examine some of the key aspects of Owen’s theological framework and pose an inquiry into the theological method of this remarkable Christian man.

What are People For?: The Agrarian Vision of Wendell Berry

Presenter: Gregory Poore

Faculty Advisor: Hal Poe

The farmer, cultural critic, poet, novelist, and essayist Wendell Berry has thought deeply and practically on the significance of nature, place, community, family, marriage, and work, and on the importance of responsibility and fidelity in each area. Without being reactionary, he questions the many costs and casualties of what has, for the past one hundred years, almost unquestioningly been considered progress, raising questions about who man is and how he should live within the order of creation. Berry makes a plea to change the way we think about, value, and live in the world, arguing that human life must be lived on a human scale that takes into account the limits of both mankind and creation. Only by submitting to the limitations of a particular place, time, and history can one learn to properly care for the world and one’s neighbor. Through a large number of primary and secondary sources, this paper examines Wendell Berry’s agrarian understanding of what it means to be human and his ensuing agrarian vision of life.

COMMUNICATION ARTS

Shared Light: A Visual Exploration of Union University's Art Department

Presenter: Tyler Malone

Faculty Advisor: Jim Veneman

Artists create art for many reasons and face constant struggle in just as many ways. Artists who also carry a faith and belief in Jesus Christ, I believe, bear additional burdens. The Christian artist is charged with creating artwork that illuminates minds, breathes life into culture, and engages worldviews. Students who are being trained in art at Union University are regularly encouraged to integrate their faith into their artwork. I sought to capture in photographs the way student artists at Union create art and show their faith. I chose to create unique photographic portraits of individuals and their work relying heavily on controlling light. The results are images that illustrate how the light Christian artists bring into the world is presented through their work.

Strategies for Hispanic Marketing and Communication Processes

Presenter: Jill Martin

Faculty Advisor: Kina Mallard

This research project is an examination of past, current, and future marketing and communication strategies for reaching the Hispanic population of the United States. According to *Advertising and Marketing Review*, "The single most important segmentation factor among U.S. Hispanics may be their country of origin... The culture, beliefs, opinions, and consumer behavior patterns of U.S. Hispanics are not identical, as a result of the influence of differences in their native countries' geography, indigenous ancestry and colonial origins." Currently, approximately 40 million Hispanics from 22 different countries of origin live in the United States, and the population is increasing at a rate six times faster than all the other populations combined. America, and specifically corporate America, must recognize and utilize this market. This research identifies the differences and commonalities within the population, as well as analyzes the effectiveness of marketing and communication strategies aimed at the people group.

DIGITAL MEDIA STUDIES

Catalyst

Presenter: Matt Brubaker

Faculty Advisor: Chris Blair

This project involves learning new skills and undertaking new challenges in the form of authoring a DVD complete with interactive menus. The DVD will serve as a medium for a short film that I am working on as well. The film is an allegorical tale of grace and decay that deals with one man's struggle to validate his existence. This project will encompass a broad range of skills, ranging from cinematography and non-linear editing to MPEG-2 compression and DVD authoring.

The Development of a Web-based Personal Communication Application

Presenter: Eric Murrell

Faculty Advisor: Chris Blair

The internet is drastically changing the way people communicate and relate to one another. Personal websites and "blogs" are quickly becoming a standard medium for social interaction. These sites can also serve as a form of promotion to potential employers. My goal throughout this project is to create a website that communicates my thoughts and personality while presenting an accurate representation of my skills to potential employers. I have also emphasized extensive user interaction and strict adherence to modern web standards. After hours of researching Cascading Style Sheets, Macromedia Flash, PHP, MySQL, and XHTML, I have created an elegant design layout that is accessible on a variety of web browsers and computing platforms.

A Digital Portfolio for Photography

Presenter: Micah Moyers

Faculty Advisor: Chris Blair

This project aims to create a digital portfolio for photography using a website as the medium. The purpose is to create a portfolio that organizes and displays photography in an easy to use format. I chose web as my medium because there is nothing to keep up with (CD/DVD) and it can be accessed anywhere there is an Internet connection. Using flash will also put the portfolio a step above more conventional formats. Tools required will be Macromedia Flash, Adobe Photoshop and Adobe Illustrator. This project will also require efficient use of Actionscript for Flash and general design skills in Photoshop and Illustrator.

Digital Portfolio

Presenter: Adam Houston

Faculty Advisor: Chris Nadaskay

The key element in this graphic design work is the structured order of information and the structured balance of images, as well as a concerted effort to keep my work simple, focused, and unified. In much of my work, especially my illustration, I use bright, bold, sometimes seemingly unnatural colors to create mood and emotion, though in my photography the colors present are anything but unnatural. The sensibility towards order and balance I cultivated in myself for graphic design provides me with a unique framework for approaching all other visually communicative tasks—including web design and photography—and means each piece I create in those fields also possesses a “designed” feel. In balance, order, unity, and simplicity, I see great beauty.

DMS Seminar: Final Presentation

Presenter: Tyler Malone

Faculty Advisor: Chris Nadaskay

Digital Media Studies majors in the art department are required to produce a final multimedia portfolio. This portfolio can be placed on a writeable CD for easy distribution and viewing, or placed on the web to serve as an online portfolio. The use of multimedia software that has been learned during the coursework is required to create the portfolio. I have chosen to create a Macromedia Flash based website that will showcase my best work. This site will feature a portfolio slideshow to quickly view the very best work. I will also include galleries for photography, graphic work, and other two-dimensional work such as drawings and paintings. A professional resume will be available for viewing and download, as well as a short biography.

DVD Portfolio

Presenter: Trae Cadenhead

Faculty Advisor: Chris Blair

To showcase the video work that I have completed over the last four years, I have created a DVD portfolio, displaying some of my best work in an exciting interactive format. To create the project, I did extensive work in filming and editing. I learned how to use Adobe After Effects to create the animation for menus and intros. The full featured DVD also includes subtitles, additional audio tracks, and a 5.1 Surround Sound audio mix.

An Extension of My Heart

Presenters: Jonathan Blair

Faculty Advisor: Chris Nadaskay

The sound of the click, the smell of the chemicals, the excitement of seeing the light across the negative, and then seeing the nothingness turn into an image. My pulse quickens and the adrenaline starts going whenever I’m in this situation. The power of the image has changed me and I cannot return to the way I used to live my life. By allowing you to see straight through to my heart, the imagery I want to show you is not superfluous fluff, but images that will change the way you see the world. This presentation will incorporate my love for photography with my knowledge of other medias learned in the course of my collegiate career. Using all media made/knowledge learned in my concentration, I will present my conception through process of portfolio selections and new original compilations displayed through an interactive documentation of my work.

Interactive Portfolio

Presenter: Brian Joyce

Faculty Advisor: Chris Blair

For my final senior seminar project, I was required to choose from a list of software and design a digital portfolio. I elected to use Macromedia’s Director MX program to create a portfolio that will be highly interactive and visually appealing. I haven’t used Director in a year and even then not in depth, so learning the program again will be time consuming and require dedication. This will require me to stretch beyond my current skills and learn something new. At symposium, I will present an interactive CD that is simple enough so that any user can navigate it, and proves to be visually dynamic to those judging it.

Senior Seminar Interactive Portfolio Project

Presenter: Lauren Ormsby

Faculty Advisor: Chris Nadaskay

I will be presenting a personal website required for my Digital Media Studies Seminar course. This site was built from the ground up and includes Flash elements, Cascading Style Sheets, a form, graphics, etc. The sole purpose for this site is to be used as a portfolio for future employers, while my blog and updates will encourage family and friends to visit the site. I desire to make this site interactive yet easy enough to navigate by my grandmother.

EDUCATION

The Project Approach in an Early Childhood Setting

Presenters: Kristen Lutrell & Jessica Cherry

Faculty Advisor: Carrie Whaley

The goal in the project approach is to allow students to explore their environment and gain new experiences that will aid in their overall development. The project approach involves three phases. In phase one, the topic of interest is chosen by the students. In phase two, students investigate the topic of interest by visiting a field site or asking questions of a visiting expert. In phase three, students plan and participate in a culminating event to share with others what they have learned during the project. We each facilitated a project in local early childhood settings and found that children are more engaged and focused in the topic because it was a topic they were interested in learning about. We have each developed a display board explaining each phase of the project approach in both of our projects. Our process and evidence of the children's learning are represented and explained.

The Use of Universal Design in a Community Recreational Tennis Program

Presenter: Rachel Walker

Faculty Advisor: Terry Weaver

In this program the United States Tennis Association in cooperation with the Metro Parks Disabilities Program (Nashville, TN) funded a summer tennis program for children and adults with developmental disabilities which incorporated Universal Design principles. Resources, tennis coaches, and support volunteers were gathered and trained. The program was designed to provide tennis clinics, daily practice, and tournaments which were to be accessible by all possible participants. Assessment of mobility, skill levels and difficulties were noted. Additional adaptations and modifications were created and implemented. Progress was noted and adjustments made. The culminating event was a tournament based on skill levels. The benefits of being involved in sport/recreation based on Universal Design principles were evident among the participants. Evidence of increased skill levels and greater socialization were documented. Moreover, benefits included meeting new people, developing new skills, having fun, gaining a sense of belonging and achievement, and in addition, improved health.

ENGINEERING

Design of a Device to Treat Cortical Visual Impairment

Presenters: Andy Robinette, Joshua Shrewsberry, Ginger Allen, David Foster

Faculty Advisor: Jeanette Russ

Four engineering students are working with Deena Smith and the Star Center to design a device called "The Little Box." This device will assist parents in working with children diagnosed with Cortical Visual Impairment (CVI), a condition in which the brain does not consistently and/or effectively interpret the signals the eye sends. This disability can be marginally corrected – if not healed – with persistent dedication to instructional strategies. "The Little Box" is a novel design that conveniently organizes some of the most effective strategies for treating CVI into a single product. Basically, the device is a portable dark room equipped with visual stimuli. The rigid frame structure with opaque curtain walls will be placed over a child lying on his back. Once inside, the child can individually activate several illuminated push buttons. When properly activated, the push button will initiate a timed display of a bright light.

The Missile Interceptor

Presenters: Josh Shrewsberry, Ginger Allen, Jeff Whitt, Andy Robinette

Faculty Advisors: Don Van & Chris Song

In order to simulate the technology of military missile interceptors, our team is combining knowledge from both "Engineering Dynamics" and "Materials Science and Engineering" to create a physical model of the phenomenon of one projectile strategically colliding with another. While our design will be primitive compared to modern day technology, it will incorporate a computer program that calculates the adjustments to the Missile Interceptor. The launching mechanisms will consist of a barrel that holds a projectile ball. They will fire from the device by means of force which is produced by a strong spring. A simulation of a missile interceptor will be created before your eyes as two balls are launched from separate locations, but will collide at a calculated point during their trajectory. To prove that the system is not fixed, the angles and location by which the balls are released will be randomly determined at presentation time.

ENGLISH

Creative Writing

Presenter: ENG 312 Students

Faculty Advisor: David Malone

Students in English 312, Introduction to Creative Writing, will read selections from creative works they have been drafting, workshopping, and revising over the course of the semester.

Hawthorne's Use of History in The Scarlet Letter

Presenter: Mariann Martin

Faculty Advisor: Hadley Mozer

My paper will be a literary analysis of Nathaniel Hawthorne's *The Scarlet Letter*. From a new historicist perspective, it will look at the historical documents Hawthorne used to write the book and how those documents reflect the biases of the age and culture in which they were written. It will examine how Hawthorne's own historical perspective shaped his characters and plot. I believe that my research will show *The Scarlet Letter* was influenced by and reflects the historical events in Hawthorne's time more accurately than it does the time of the Puritans. In this paper, I will rely on the primary work, but also use secondary documents such as other historicists' analyses and books on history of that time period.

A Feministic Doll House

Presenter: Courtney Braswell

Faculty Advisor: Hadley Mozer

Although Ibsen himself has stated that he did not intend to write a play promoting social activism, some critics maintain that *A Doll's House* (1879) inadvertently encouraged the rise of feminism. Examining the play from a feminist perspective, I will further explore how Ibsen's portrayal of his heroine, Nora, and her failing marriage to Torvald challenged Victorian stereotypes of women and marriage and helped to prepare the way for modern feminism.

A New Historical Criticism of John Donne's 17th Meditation

Presenter: Joshua M. Hall

Faculty Advisor: Hadley Mozer

I will present research on John Donne's 17th *Meditation* from the perspective of the New Historical Criticism. I will discuss the role of the 17th century doctor and the limited medical procedures available to English citizens during the 1600's. In so doing, I will introduce the concepts of sickness, pain, and tribulation as they would have been viewed by the populace of Elizabethan society. I will also discuss the

significance of the church bell during Donne's lifetime and exactly what role it played in early 17th century culture. I will then present Donne's meditation, as it would have been interpreted during his lifetime and unearth the effects it may have had on the 17th century church.

Supernaturalism During 16th Century

Presenter: Michelle Lawrence

Faculty Advisor: Hadley Mozer

In William Shakespeare's *Hamlet*, the supernatural has a poignant role in the plot. Understanding how the original audience of *Hamlet* would have viewed the ghost as well as how society viewed ghosts plays a crucial part in discerning the validity of Hamlet's father's assertion that Claudius murdered him. Hamlet's actions of vengeance upon Claudius are avenging his father's murder. If the ghost cannot be trusted and the validity of his statement cannot be proven, then the death of Claudius and those who also died were in vain. Researching this topic from the view point of New Historicism, I plan on exploring the acceptance of the supernatural during the time of Shakespeare and the interpretations created due to the social contexts.

HISTORY & POLITICAL SCIENCE

Attitudes Toward Covenant Marriage

Presenter: Adrienne Briles

Faculty Advisor: Kevin Cooney

This paper will show that among college students at Union University and University of Memphis, strong support for government providing the option of a covenant marriage exists. The researcher proposes that support for government providing the option of covenant marriage is the same whether one attends a religious service regularly or not. The thought behind this is that the majority of Americans recognize marriage as a vital institution to society, which ought to be preserved. Thus, factors such as church attendance, party identification, gender, and race have no influence. Consequently, since the institution of marriage is valued nationwide, broad popular support exists for government providing the option of covenant marriage. The research in this paper will focus on attitudes toward covenant marriage among college students and indeed show that broad popular support exists across the board for government providing the option of covenant marriage. Additionally, it will highlight the method

obtaining such results and discuss the arguments for and against covenant marriage.

British Appeasement: The Right Thing to Do

Presenter: Natalie Treece

Faculty Advisor: Keith Bates

This paper examines the reasons why Neville Chamberlain chose to implement the policy of appeasement when dealing with Adolf Hitler in 1938. This policy, executed by Chamberlain, has been controversial since its inception, but Chamberlain honestly believed that appeasement was the right solution to solve the impending foreign policy crisis. There were several reasons that led Chamberlain to believe that the policy was in fact the “right thing to do.” He believed appeasement was the correct policy because of the inequalities in the Treaty of Versailles and the Great Depression that had swept across the world. From my perspective, the most important factor was the fear of another “Great War” and the catastrophe that would ensue for the British government because of it. This paper provides details about the situation that Great Britain and the world faced at the time, the beliefs of Neville Chamberlain, and if there were alternatives to appeasement.

Changes in Public Opinion on Social Issues from the Pre-Regan Era to Post-Clinton Era

Presenter: Matt Oshel

Faculty Advisor: Kevin Cooney

This paper will show that at least moderation, if not liberalization of public opinion on social issues has occurred from the pre-Reagan era (1980) to the post-Clinton era (2000). Following the illustration of this change, a theory of causation will be proposed and considered. This theory is that a decrease in religiosity over this same twenty year span is to blame for this liberalization of public opinion. If this theory of causation is rejected, other options for consideration will be mentioned by the researcher.

Little Town: A Commitment to Obedience Not Integration

Presenter: Heather Tobe

Faculty Advisor: Judy LeForge

As the first public high school in the South to desegregate, Clinton Senior High School made history in 1956 with twelve African-American students. This paper deals with the history of segregation in general through looking back at various court cases that led to the infamous Brown vs. the Board of Education. *Little Town* will attempt to tell the story of one tiny

town in Tennessee along with real-life testimonies of whites, blacks, and leaders that made national news and influenced the schools of the South. The paper will present an evaluation of court cases and school integration attempts throughout the Volunteer State from 1958 to the present in light of the Clinton, Tennessee incident. The Clinton, Tennessee story has impacted Tennessee and the South in two ways: it has worked as a catalyst for the desegregation of schools and has been an example to all schools in the South.

The Rationale Actor Model and American Foreign Policy Decision Making

Presenter: Ross Mitchell

Faculty Advisor: Kevin Cooney

Since the beginning of the Cold War, there have been conflicts that have shaped the course of American foreign policy. The Cuban Missile Crisis is widely accepted as the classic example. Using the Rational Actor Model of decision-making, the actions taken by the Kennedy Administration during the Cuban Missile Crisis will be compared to the actions taken by the Nixon administration during the Yom Kippur War. The goal of this research is to attempt to explain how the United States makes its foreign policy decisions in times of crisis. This paper will present a theoretical approach, and the results presented will prove the stated hypothesis and reject the null hypothesis.

Zwingli: For Country and God

Presenter: Sharon Hart

Faculty Advisor: Keith Bates

Zwingli, one of the lesser known reformers of the Protestant Reformation, established himself as an important part of the Reformation through his views on violence. While historians place much attention on Zwingli’s theological differences with reformers such as Luther, it was Zwingli’s strong and unique stance on the Christian’s use of violence which truly distinguished him from most other reformers. Zwingli’s upbringing and process of education was very similar to Luther’s yet both men held distinctly different views concerning violence. Zwingli did have some unique factors which may have influenced his opinions. Originating from the Swiss Confederation, Zwingli had strong humanist connections, and developed his own theological convictions which gave him, as a reformer, a unique perspective on the Christian’s role in warfare. This view evolved and adapted throughout his life as he adjusted his opinions on violence to justify the defense of his “fatherland,” the Swiss Confederation. It was Zwingli’s attachment

to the Swiss Confederation and his love for his country which strongly influenced him to take up the sword himself, and fight in the name of God for his homeland.

INTERCULTURAL STUDIES

An Analysis of Intercultural Training Programs

Presenter: Stefi Brazzeal

Faculty Advisor: Cynthia Jayne

Intercultural communication is becoming both commonplace and essential within the borders of the U.S. and internationally as Americans travel and work abroad. As societies become more and more interdependent and interconnected, intercultural training programs have become important tools for helping people from different cultures to understand each other and to develop skills that foster and maintain healthy intercultural relationships. This paper will seek to explore the growing need for these programs, the purpose and goals of the programs, and the methods certain programs use to meet these goals. It is also important to evaluate the trainer's role and the future of intercultural training.

Militant Islam: Why Fundamentalists and/or Radicals Perpetuate the War Against Terrorism

Presenter: Sarah Beth Quinton

Faculty Advisor: Cynthia Jayne

The war against terrorism has now reached a global level where no geographic borders can prevent its disaster. Militant Islam has a crucial role in the war against terrorism. Fundamentalists within Islam are one of the primary causes of terrorism as we now know it. Terrorism is an overwhelming concern for every country, whether that country is considered third world or a superpower. This paper is an exploration of how fundamentalists and/or radicals cause the war against terrorism to steadily continue. Specifically, I will explore how these disenfranchised participants of Islam are making an environment conducive to terrorist behavior.

Racism and It's Implications Within the Criminal Justice System

Presenter: Erica Rose

Faculty Advisor: Cynthia Jayne

My presentation will be on the subject of African-Americans within the United States criminal justice system. I will focus on the historical implications of racism and segregation and how that plays into the socioeconomic status of African-Americans today and why that is a possible reason many of

them turn to crime for stability. I will also look at the role of criminal justice officials and whether or not their prejudices towards the African-American race determine their actions towards them. I will use statistical information as well as specific cases that demonstrate this. One case I will focus on in particular is the Amadou Diallo situation that sparked my initial interest in this topic. I will also look at the treatment of African-Americans within the legal system, the prisons, and the death penalty. I will conclude by offering personal suggestions for how the racial situation of African-Americans in the criminal justice system can be improved.

Refugees and Asylum Seekers in the United States

Presenter: Stacy Storey

Faculty Advisor: Cynthia Jayne

Refugees and asylum seekers are a vulnerable population who has experienced traumatic experiences within their own countries before arrival to the United States. Because of the U.S. attention on Homeland Security since September 11, 2001, many new laws have been established regarding immigration. The refugee population is even more vulnerable when they are left in detention centers for unnecessary amounts of time and experience unfair treatment. I will explore the current refugee situation, the treatment of refugees and asylum seekers in the U.S., the effects it has on refugees and asylum seekers, and why the system needs to be changed.

Struggle for Peace: Civil War and the United Nations Peacekeepers

Presenter: Mariann Martin

Faculty Advisor: Cynthia Jayne

In this paper, I will focus on the United Nation's Peacekeepers and their role today in mediating in civil wars around the globe. First, I will look at a brief history of how the UN peacekeepers were formed and what their initial mission was, especially in relation to mediating in world and inter-country wars as compared to the problems posed by civil wars. I will then assess some of the difficulties of attempting to bring peace to divided and warring nations and some of the causes for failure and common mistakes made by UN diplomats and peacekeepers. To do this, I will use some of the recent conflicts such as those in Bosnia and Rwanda as examples. In conclusion, I will attempt to offer some solutions to these failures and

some ways in which UN peacekeeping missions could become more successful.

LANGUAGE

Internally Displaced Persons in Columbia

Presenter: Stacy Storey

Faculty Advisor: Cynthia Jayne

Colombia has the third largest percentage of Internally Displaced Persons in the world. Millions of people have been forced to relocate from their homes due to the on-going civil war in the past forty years. Despite the programs that have been set up to help the displaced persons, there has been little success to protect the rights of the displaced in the past forty years. This research will examine selected programs and evaluate their success and failures.

The School of the Americas and the U.S. Influence on Latin America

Presenter: Charli Cox

Faculty Advisor: Cynthia Jayne

The School of the Americas is based in Columbus, GA and was founded by the U.S. Army. The instructors train Latin American soldiers on military tactics to be used in their home countries, sometimes against the dictators that take over the country. However, many of these graduates have gone on to commit terrible human rights violations in their home country and some have even become dictators themselves. Each year protestors gather outside of the school to march against its existence. This presentation will show why the U.S. started this school, what its influence has been on Latin America, and examine whether or not the school should be shut down.

MATHEMATICS AND COMPUTER SCIENCE

Data Security: What Protects You, How Does It Work, and Is it Effective?

Presenter: Kevin Hieb

Faculty Advisor: Jim Kirk

With computers and their large amounts of information becoming a vital part of society, data security has become a significant issue. As time progresses more people are using the internet to pay their bills, plan trips, and do countless other things. It is the job of computer scientists to help keep personal information secure and out of the hands of people who would misuse the information. Data security is the science of protecting people and their information from individuals for which the data was not intended.

During my presentation I will communicate what is currently being used to help keep data secure, why it is necessary to do so, and how effective the current security systems are.

Developing a Database Management System for Optimizing Recreational Ministry

Presenter: Wayne Campbell

Faculty Advisor: Haifei Li

This project was created to benefit the recreation ministry of West Jackson Baptist Church. The ministry has a recreational facility consisting of two basketball gyms, a weight room, and a walking track. The purpose of this ministry is to service the needs of the church body as well as reach out to non-church members in the community. Until this program was created there was no truly accurate way of tracking who was actually using the facility to be able to minister to their needs. Hopefully this database system will help the outreach ministries of the church reach more people more effectively. The project uses preexisting hardware that was being used at minimal functionality. New additions included a database and user-friendly front-end to the database to handle check-in and check-out to the facility. The program had to be developed to best fit into the situation where it was to be implemented. This made the program more functional, practical, and cost-effective than some system that might have been purchased.

E-Commerce: Designing and Creating an Online Store

Presenter: Daniel Green

Faculty Advisor: Haifei Li

For this project I have created an online store for the contemporary Christian artist, Steve Green. Steve Green Ministries' product ordering system is currently limited to phone orders. The transition to e-commerce should both increase sales and add efficiency and convenience to the ordering system. I will show how I used PHP to create customer information forms, a shopping cart system, and an ordering process for the online store. Furthermore, I will explain the need for security in online ordering and how I utilized the functionality of SSL to ensure information security for each online transaction.

Muzzling the Mirkworlf: Programming for an Online Text-Based Role-Playing Game

Presenter: Ryan Gillespie

Faculty Advisor: Jim Kirk

In this presentation, I report on my experience working with a team of programmers on an online text-based role-playing game that is currently being played all over the globe. The game is called "Return of the Shadow" and it is based on the books of J.R.R. Tolkien. The programming team is primarily occupied with fixing bugs found in the code and adding new features to the game, such as spells, skills, or various other ideas proposed by programmers or players. Our overriding goal is to keep the game exciting and entertaining. To achieve this, we must keep track of how the game works and how players react to the game. A major concern is keeping a balance in the level of difficulty, since things that are too difficult as well as things that are too easy can hurt the player base.

The New Quizmaster: Teaching an Old Dog New Tricks

Presenter: Willie George

Faculty Advisor: Jim Kirk

QuizMaster is Union's student response software. This software was originally written in 2001-2002 as Philip Smith's senior seminar project and was maintained and upgraded by Allen Smith until May 2004. This project intends to add some features to Quizmaster that are found in other, commercial student response systems. These features enhance the flexibility of the server, presentation of the quiz results, and ease of use for the proctor of the quiz. The existing source code is in the Java programming language, so all updates will be likewise. This project demonstrates network-based communications and graphical interface design in Java, as well as techniques for modifying preexisting code that has been patched and updated for three years.

Ophthalmic Data Mining

Presenter: Andrew Skaggs

Faculty Advisor: Jim Kirk

Demographic information, pre-existing health conditions (such as diabetes), eye health history, and many other factors are critical in conducting research for ophthalmic procedures and medicine. My project involves designing a research assistance program for the Toyos Clinic which will work with a 3rd party Electronic Medical Records software package, SOAPWare. This research assistance program will query an MSDE database on a remote server, gather the requested information, and output the data to an Excel spreadsheet for viewing and distribution to

other industry professionals. Also integrated will be the ability to save queries and retrieve previously used queries.

Reducing Your Workload: A Jewelry Database and Management System

Presenter: Phylis Anyango

Faculty Advisor: Jim Kirk

This project is aimed at designing a jewelry database for a local retail business. In the past, the process of keeping control of inventory and jewelry transactions has been done manually, which has proven to be very tedious, time consuming, expensive and unreliable. The jewelry database will help keep control of a variety of merchandise, vendors, time of purchase, retail prices and other essential details of the jewelry business. The system will allow complete access to the database, allowing the proprietor to manage the data and to record every transaction more easily. For example, new customers can be entered, or data can be modified or deleted. A customer's record can be retrieved using the customer's account number or phone number. The system will be an ordinary Windows stand-alone application written in Java.

A Weapon of Math Destruction: Math Made Easy

Presenter: Crystal Gibson

Faculty Advisor Jim Kirk

In the fast paced world of the 21st century, we often get ahead of ourselves. Things that used to be taught in junior high are now being taught in elementary school. In subject areas such as mathematics, some children just can't keep up. In doing research, I found that while most children enjoy the eye catching graphics of current math software, it can often be distracting and confusing. I also discovered that a lot of math software for children lacks examples and diversity. Therefore, I have developed a program with simple graphics and a variety of problems, as well as offering examples for each type of problem. Math Made Easy focuses on the eight big ideas of math used in teaching elementary mathematics. It was developed using Microsoft Visual Basic.

PHYSICS

Analyzing the Effects of Multileaf Collimator (MLC) Placement Errors in Radiation Therapy

Presenter: Brian A. Taylor

Faculty Advisor: Kyle Hathcox

Radiation therapy is a very powerful tool in the treatment of brain tumors. The efficacy of cranial

radiation therapy depends on an adequate dose to the tumor. In addition, the safety of radiation is “maximized by reducing the effective dose to uninvolved brain tissue and other critical structures surrounding the target.” Therefore, specifications on mechanical devices responsible for radiation therapy must be very precise. One mechanical device that requires careful inspection is the Multileaf Collimator (MLC). This device is a vital component made of tungsten slides or leaves that shapes the radiation beam to target the tumor and block radiation to healthy structures. This project was implemented to study how leaf positioning errors in the MLC can affect the delivery of radiation. This was accomplished by comparing Dose-Volume Histograms (DVH) from the radiation treatment plan created by PLUNC (radiation planning software) and images created from an Electronic Portal Imaging Device (EPID).

PSYCHOLOGY

The Development of Self-Esteem and Attachment in Young Adulthood as a Function of Parental Bonding

Presenters: Amanda McComb, Holly Graves, Jillian Moreland

Faculty Advisor: Jinni Blalack

The intent of this study was to examine the effect of parental bonding that occurs early in life on the development of self-esteem and attachment styles of young adults in their current stage of life. Data was collected on 142 undergraduate student volunteers (n = 49 males; n = 93 females). Parental bonding was measured using the Parental Bonding Instrument (PBI) developed by Parker, Tupling and Brown (1979). Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES). Attachment style in current relationships was measured using descriptive statement indicators developed by Hazan and Shaver (1987). Analysis of the three variables of interest indicates that 38.7% had at least one optimal parent as well as healthy self-esteem and healthy relationship attachment. Thus, data collected does support the research hypothesis that both self-esteem and relationship attachment in young adulthood are influenced by the quality of the parent-child relationship.

SOCIOLOGY

Life Outside the Bubble: Transitioning into the Real World

Presenters: Lana Cosby, Sara Cadden, Koletta Douglas, Megan Johnson, Laurie McEuen, Alisha Reeves, Rachel Ryan, Christen Tucker

Faculty Advisor: Toni Chiareli

Using the intensive interview method of qualitative research, this study explores the transition process students face after attending a private liberal arts college. While individual experiences generate varied personal issues related to this transition, we posit that there are similar challenges that most graduates encounter, related to the social, financial, familial, and other spheres of life. This study, which is based on interviews with eighty graduates in their first five years of transition, aims at capturing emergent common themes, and focuses on how recent graduates construct the issues, develop coping mechanism, and bridge the gap between previous expectations and reality. While the subject is quite complex and begs further study, this project hopes to shed light on this unavoidable process in every graduate's life.

SOCIAL WORK

Social Justice: A Micah 6:8 Call for Action

Presenters: Social Welfare Policy Class

Faculty Advisor: Terry Blakely

Is social justice at the heart of social policy in America? For some, the answer to this question is a matter of life and death. Abuse, crime, poverty, and disease are factors that can potentiate the ruin of individuals, families, and communities. This research project examines critical social issues facing America's most vulnerable populations in light of just *versus* unjust social policies. Select policies will be explored in terms of risk and cost/benefit analysis, along with alternative policy solutions that may offer increased protections to those at most risk for harm.

A Marriage License is NOT a License to Rape: Advocating for the Elimination of Spousal Exceptions in Rape Legislation

Presenters: Amber Dixon, Whitney Morreau, Rachel Peterson, Victoria Shackleford

Faculty Advisor: Terry Blakely

Until the early 1970's, U.S. law did not recognize *spousal rape* as a crime; this reflected the prevailing

attitude that women were required to have sex with their husbands, and thus could not be raped by them (Roberts, 2005). While *spousal rape* is now recognized as a criminal offense in most states, including Tennessee, women who are raped by their husbands are not afforded equal protection under the law as those raped outside the legal bonds of marriage. Asserting that the *spousal rape exception* stipulation should be eliminated from Tennessee rape laws, this research explores the issue currently in debate by state lawmakers. With social justice at the fulcrum, presenters will recommend alternative solutions to existing policy, supporting their arguments with critical ethical and cost-benefit analyses.

TEACHING ENGLISH AS A SECOND LANGUAGE

The Language Minority Experience: Ecuadorians Living in Spain

Presenter: Charli Cox

Faculty Advisor: Phillip Ryan

I will present a case study that explores Ecuadorian immigrants' perception of the role that their language plays in their lives in Madrid, Spain. This case study reveals that, although these immigrants perceive that their language variation has some negative effects on their lives, they identify language as one challenge among many that they face. In this presentation, I will review my initial research questions, sociolinguistic literature related to language variation and prestige, power and minority status, my methodology for data collection and analysis, and my findings and implications of this case study.

Non-Native English-Speakers at the University

Presenter: Cam Armstrong

Faculty Advisor: Phillip Ryan

What is it like to be a student in a higher education setting in which you must speak your second language? This is the question that prompted this qualitative research project exploring the experiences of non-native English-speakers at Union University. After developing initial research questions, I collected and triangulated data through interviewing participants, collecting data from across campus, and drawing from secondary sources supporting my findings. Through this research, participants shared about the changes they have experienced while enrolled in college, the challenges they faced due to differences in language and culture, and strategies they used to succeed. My

research includes narratives of these students' college careers and has implications for faculty members, staff, and students who desire to build relationships with non-native English-speaking students and create a helpful learning community that meets their needs.

Mainstream Classes as Language-Learning Contexts: Economics, ESL, and Culture

Presenter: Cindy Harrell

Faculty Advisor: Phillip Ryan

This comparative case study explores the experiences of fifth grade teachers as they work with English Language Learners (ELLs) at two schools: five teachers at a university preparatory school and four teachers at a Title I public school. In this presentation, I will describe how the socioeconomic contexts of the schools and the teachers' levels of curricular flexibility are key influences in these teachers' behaviors with their students, including their ELLs. After presenting my initial research questions, I will explain my methodology for data collection and analysis. I will then elucidate my findings and consider them in light of educational and linguistic literature related to socioeconomics, standardized testing, and teaching ELLs. Finally, I will integrate these findings with the further implications this case study has for me as a pre-service ESL teacher.

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