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2002 - The Seventh Annual Symposium of Student Scholars

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The Seventh Annual Symposium of Student Scholars

Recognizing Excellence in Student Scholarship

April 5, 2002
Seventh Annual
Symposium of Student Scholars

April 5, 2002

Program

9:00 a.m.  Welcome
Dr. Mary Lou Frank
Dean, Undergraduate and University Studies

9:00 a.m. – 12:00 p.m.  Posters/Demonstrations/Performances
Presenters available to discuss their works

Presenters at even-numbered displays will be available from 9:00 – 10:30
Presenters at odd-numbered displays will be available from 10:30 – 12:00

Performance Schedule:

10:00 a.m.  Dan Maner  “October Winds”
11:00 a.m.  Dan Maner  “October Winds”

Organizing Committee
Dr. Don McGarey, Committee co-chair, Associate Professor of Biology
Dr. Bill Ensign, Committee co-chair, Assistant Professor of Biology
Dr. Mark Patterson, Assistant Professor of Geography
Dr. Laurence Sherr, Assistant Professor of Music
Ms. Carol Pope, Assistant Director for disabled Student Support Services,
    Advisor for Phi Kappa Phi

Special thanks to:
Phi Kappa Phi for support of the reception and printing of the abstract booklet.
College of Health and Human Services

The Ethics of Disclosure in Pediatric AIDS Via Vertical Transmission: Laura Boatner* and Dr. Lois Robley, R.N.

College of Humanities and Social Sciences

Relation among implicit and explicit attitudes towards eating, locus of control, and dieting status: Terrie L. Doherty, Michelle M. McKinney*, J. Bassett, and Dr. Sharon M. Pearcey

Parking Lot Politics: Does Age Really Matter?: Noelle M. Coiro*, Lisa A. Paris* and Dr. Christine Ziegler

Elderly Abuse: Modeling Collaborative Services Toward a Heterogeneous Population: Cathy Ward*, Dr. Barbara Karcher and Dr. Judith Stillion

Costa Rica 'pura vida': Mike Pappas* and Dr. Agatino LaRosa

The KSU Connection: A GIS Project for the Extension of MARTA Rail Line to Kennesaw State University: Richard Mcleod*, Jody Vaughan* And Dr. Mark Patterson

Poster Project: Wyoming Territory (Established 1868): Jesse D. Johnson* and Dr. Agatino LaRosa

Driving Atlanta Crazy: Jeannie Hayden* and Dr. Agatino LaRosa

Rural Living Along the Emerald Coast: Sylvia Powell* and Dr. Agatino LaRosa

The Changing Southeast at the Turn of the 21st Century: Sherry Bartley* and Dr. Agatino LaRosa

Diabetes and Health Care Facilities in Georgia: Henry Bryan, RPLS* and Dr. Mark Patterson

Tartans of Scotland’s Western Islands: Stephanie A. Roper* and Dr. Agatino LaRosa

Organ Pipe Cactus National Monument: Michael E. Nugent* and Dr. Agatino LaRosa

Oklahoma City Tornado Outbreak: How the May 3, 1999 Storms Effected the Area: Meril Moore* and Dr. Agatino LaRosa

College of Science and Mathematics

Enhancing Giant Pandas' Activity Level With Enrichment Objects: Gwen Smith* and Dr. R. C. Paul

Heat Shock Protein Expression And Regulation of the Endocrine Stress Response in Fish Pituitary Cells: Victoria Barron*, Rehema Muhindo* Peter Goodnight, Kris Griffith and Dr. A. Lynelle Golden
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The Ethics of Disclosure in Pediatric AIDS Via Vertical Transmission: Laura Boatner* and Dr. Lois Robley, R.N.

Department of Baccalaureate Degree Nursing, College of Health and Human Services

Globally, 4.3 million children under the age of fifteen have succumbed to AIDS. In the year 2000 alone, an additional 600,000 diagnoses were made within this age group, bringing the total number of children (<15 years) currently living with AIDS to 1.4 million. Of the children diagnosed, nearly all were infected via perinatal transmission. While the numbers are staggering, there is a slight glimmer of good news. The prevalence of pediatric AIDS cases has steadily declined since 1992, largely due to improved medication regimens, closer clinical management, and a decrease in the number of HIV-infected women who give birth. When perinatal transmission does occur, children are also now living longer. Pharmacologic agents such as zidovudine, didanosine, lamivudine, nelfinavir, ritonavir, and nevirapine have increased the life expectancy of infected children, and those who were unlikely to have survived to preschool a decade ago are now reaching middle school age and beyond. Current statistical trends show that between 36% to 61% of perinatally-infected neonates now survive to age thirteen. With these promising statistics come unprecedented concerns. Adolescence is a period in which there is "gradual assumption of adult responsibility," but some of this responsibility may admittedly be assumed earlier than is desirable. In 1997, adolescents between the ages of fifteen and seventeen were surveyed regarding sexual behavior, and responses revealed that greater than 46% had engaged in sexual intercourse. Racial and ethnic differences in this study were notable. Of the African American adolescents surveyed, sexual intercourse had occurred for approximately 67.2% and 78.9% of the females and males, respectively. When long-term survivorship crosses the path of adolescent development, the issue of disclosure becomes paramount. A recent case study was published by this student in the March/April issue of Journal of the Association of Nurses in AIDS Care. The case describes a pediatric patient cared for during the course of a clinical rotation in an inner-city hospital. The client contracted AIDS via vertical transmission and, at age fourteen, was seemingly unaware of her medical diagnosis per the parents’ request. Her unfortunate circumstance demonstrates not only the dire implications of parental secrecy, but also the resultant ethical issues that contemporary nurses must address.
College of Humanities and Social Sciences

Relation among implicit and explicit attitudes towards eating, locus of control, and dieting status: Terrie L. Doherty, Michelle M. McKinney*, J. Bassett, and Dr. Sharon M. Pearcey

Department of Psychology, College of Humanities and Social Sciences

This study examines implicit and explicit eating attitudes of 50 undergraduate students at a regional southeastern university. The implicit attitudes test (Greenwald & Banaji, 1995; IAT), a newly designed methodology to assess implicit attitudes of cognitive restraint and dieting, will be used in addition to a reliable assessment, the 3-factor eating questionnaire (Stunkard & Messick, 1985; TFEQ), which measures eating attitudes on three dimensions (cognitive restraint, disinhibition, and perceived hunger). Participants will be asked to anonymously complete a brief demographics questionnaire, the TFEQ, the Herman and Polivy cognitive restraint scale (Herman and Polivy, 1980; RS), and several timed IATs. To assess locus of control of weight related attitudes, a modified version of the health locus of control scale (Wallston, Wallston, Kaplan, & Maid, 1976; HLC) will also be given. Finally, as a behavioral measure of explicit attitudes, participants will be offered a choice of a "healthy" snack (apples, health food bar, fat free chips) or an "unhealthy" snack (chips, candy bars) to take with them upon completion of the study. Significant results will be reported using Pearson product correlations. Findings will contribute to the understanding of factors and underlying attitudes that drive eating behavior.
Parking Lot Politics: Does Age Really Matter?: Noelle M. Coiro*, Lisa A. Paris* and Dr. Christine Ziegler

Department of Psychology, College of Humanities and Social Science

The purpose of this study was to determine whether there was a relationship between the time people took to exit a parking space, the age of the person waiting (elderly person or young person) and size of the waiting vehicle (small car or a large SUV). The sample was composed of 62 participants. The driver was the same person in both age categories, appearing as herself, a 23 year old and then disguised with a wig, cataract glasses and a frumpy flower shirt to appear 60+. The participants were observed in the central parking areas of a large suburban mall, during a large sale event. The researcher recorded the sex, vehicle size and time to exit for each observation, using a stopwatch, and a checklist. A main effect for age was found with people taking longer to exit when the person waiting was young. No main effect was found for experimenter car size however it did produce several interesting interactions. The findings were discussed with regard to better understanding society's attitudes and actions towards our elders. In addition, the results may provide more information regarding some of the more applied aspects of age discrimination. Further, the findings may also provide useful insights related to factors associated with road rage.
Elderly Abuse: Modeling Collaborative Services Toward a Heterogeneous Population: Cathy Ward*, Dr. Barbara Karcher and Dr. Judith Stillion

*Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences

The graying of America is rapidly gaining attention in all sectors of society prompting heightened concern for the social problem of elder abuse. Since the 1970s, state investigative ombudsman units were developed to monitor elder abuse in institutionalized settings. However, only five percent of the older population is institutionalized. The remainder of the older population struggling in abusive situations must rely on the assistance of state-operated Adult Protective Service (APS) agencies. Yet, the organizational structure of APS, as located within the centralized organization of the Department of Children and Family Services is problematic for several reasons, 1) APS most frequently follows the child abuse model of intervention, even when investigating cases of elder abuse, 2) APS workers often lack training in the issues specific to older adults, and 3) APS lacks an opportunity to investigate situations that may place older adults at greater risk for abuse. Instead, as we move toward the future, collaborative efforts of intervention and prevention may hold the key to decreasing occurrences of elder abuse. It is proposed that by relocating Adult Protective Services (APS) within the Administration on Aging, education and specialized training are more readily available to the elderly population and to APS workers, APS workers are better positioned to advocate for the population they serve; and finally, collaborating the efforts of APS and other age-related service agencies produces less duplication and better recordkeeping, which is essential to the prosecution of elder abuse cases.
Costa Rica ‘pura vida’: Mike Pappas* and Dr. Agatino LaRosa

Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

I chose Costa Rica as the topic of my poster because of the diversity of its environment and the remarkable commitment the government to maintain the natural beauty of its land. In an area about the size of West Virginia, Costa Rica has 30 areas designated as protected. Having visited Costa Rica twice, the scenery is amazing from the urbanization around the capital of San Jose outward past cascading waterfalls to the coastal plains to the east and the rugged Sierra Madres to the west. In between there are tropical rainforests, active volcanoes and a variety of wildlife unlike anywhere else in the world. My map is a general reference map broken down into the seven provinces of Costa Rica. Each province was saved in an individual layer and color was assigned to it. Simplification was used during the trace process. The reason being the West Coast of Costa Rica is so jagged, this amount of detail would not have been possible to illustrate on a map of this scale. The Internet was used to obtain the information contained in this map. After deciding the environment was going to be the focus, I went to several sites that focused on tourism in Costa Rica because they contained a variety of maps highlighting the National Parks and photos of the scenery and wildlife. Demographic and historical data were obtained from the CIA World Factbook website.
The KSU Connection: A GIS Project for the Extension of MARTA Rail Line to Kennesaw State University: Richard Mcleod*, Jody Vaughan* And Dr. Mark Patterson

Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

With more than 30 years of double-digit annual percentage population growth, the Atlanta Region is literally choking on its own success. Over three million registered vehicles clog the area’s roads and highways. Atlantans suffer from some of the longest average commutes in the world (33.4 miles) and spend an average of one hour and seventeen minutes in the car each day. But there is an answer.

The Metropolitan Atlanta Rapid Transit Authority (MARTA) has been operating a successful bus and heavy rail network through two of Atlanta’s central counties since the early 1970s. As the population soared MARTA didn’t for various reasons. The region became grid locked. As the third largest county with over 500,000 residents and a strong employment base of well over 250,000 people, we felt that time was past due to extend MARTA rail in to Cobb County.

We had excellent data sources and support to work with and used the technology of Geographic Information Systems (GIS) to determine the best locations based on several criteria. Our primary concern for the viability of the real life project was maximum ridership. Population and employment density were the two main factors that determined locations. Other variables included existing infrastructure displacement, pedestrian access, complementing the auto dependent public, and future expansions based on projected population and employment. As a result of our research we have developed a planned expansion that should serve the interests of our community and benefit all of its citizens.
Poster Project: Wyoming Territory (Established 1868):
Jesse D. Johnson* and Dr. Agatino LaRosa

Department of Sociology, Geography, and Anthropology, College of Humanities and Social Sciences

As a final assignment in our Introduction to Cartography course, my Poster project integrates most of the procedures that we learned in FreeHand last semester. The Poster is a cartographic product, generally used in academic conferences and non-academic meetings, for the visualization and description of specific research topics.

The primary objective of my poster was to research and explore Wyoming's early history, including the events, which lead to its early settlements, its establishment as a territory (1868), and later statehood - when Wyoming became the 44th state of the Union (1890). A secondary objective was to show how those original five counties evolved into the state's final 23 counties. The time span of my poster begins in 1803 when the United States acquired portions of Wyoming as a result of the Louisiana Purchase, and concludes in 1921 when the State's last county - Teton County - was established.

I relied primarily on the Internet for research material. I focused my research on two primary web sites: the State of Wyoming's home page and a secondary site that included two early maps of the Territory of Wyoming (1872 and 1879). The layout of my Poster includes a research main title and subtitle and two vertical panels, side by side. The left-hand panel contains all of my narrative analysis, and is divided into three sections. The section labeled Early Developments contains five bullet summaries. The second section labeled Organization (of the territory) contains a brief summary table. The third section labeled Statehood concludes with two Internet resources on the bottom of the left-hand panel. The right hand panel is divided into three sections as well: Poster Map, a Summary Table that details the evolution of the original five counties into its current and final 23 county configuration, and a Map Image, with the caption -Territory of Wyoming (1879). Steps were taken to ensure that both the left and right hand panels were lined up uniformly - both along the top and bottom of each panel. Also, I took steps to ensure that the "text" in the narrative analysis was consistent both in font, type, size, and line spacing by utilizing the following attributes in FH's text inspector: Leading, Range, Kerning, and Baseline Shift. I also tried to ensure that the elements that make up the Poster were well balanced and visually appealing (i.e., the Narrative Analysis, Poster Map, Summary Table, and Map Image).
Driving Atlanta Crazy: Jeannie Hayden* and Dr. Agatino LaRosa

Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

My poster is titled Driving Atlanta Crazy in an effort to show not only the effects the large amount of automobile driving has on metro Atlanta traffic, but on the environment and the economy as well. Because the amount of automobile traffic has increased so much in the metro area, and the amount of public transportation is limited, the Environmental Protection Agency (EPA) has deemed the area serious for non-attainment for ground-level ozone. In addition to the health threat from smog, it has also caused metro Atlanta to lose billions of federal dollars for the completion of new roads and other transportation projects. This in turn has prevented some businesses from relocating to Atlanta, because the commute time in the metro area will only become worse without added road projects and the scarcity of public transportation. My map is a general reference map containing nine counties in the metro Atlanta area. Boundary lines differentiate the counties and each county is filled with a different color. The map scale is 1:300,000, with a legend containing the county names and colors that correspond to the counties on the map. The inlet map shows all the counties within the state of Georgia, with the nine metro counties shaded in yellow. I also included pictures of Atlanta traffic, balancing text and pictures on the poster, plus an additional map of the metro area that shows the major interstate highways. Reference material came from various Internet sources such as the Georgia Clean Air Force, MARTA, and the Georgia Regional Transit Authority.
Rural Living Along the Emerald Coast: Sylvia Powell* and Dr. Agatino LaRosa

Department of Sociology, Geography and Anthropology, College of Humanities and Social Sciences

Rural America is home to a fifth of the Nation's people – keeper of natural amenities and national treasures, and safeguard of a unique part of American culture, tradition, and history. People who discuss "rural" America are likely referring to nonmetropolitan areas. Nonmetropolitan counties are outside the boundaries of metro areas and have no cities with as many as 50,000 residents. Rural areas comprise places (incorporated or unincorporated) with fewer than 2,500 residents and open territory. The western panhandle region of Florida is one of the most rapidly growing metropolitan areas in Florida. Construction along the coastal highway State Road 98 presses on at an ever-increasing pace, as more and more people choose to make their home in this scenic area. Often called the Emerald Coast, it is known for its miles of soft white sand and shimmering green-watered beaches. It's an urban center wrapped along a beautiful coast. Yet, there are rural areas and counties within twenty miles of this metropolis. Inhabitants of the western panhandle who live twenty miles or more from the coast live in a different Florida. These rural residents are attracted to the peace and quiet of rural living. There are marshes – seas of grass filled with fish and other water creatures and home to thousands of birds; there are hardwood swamps and cedar forests. Longleaf pine, once, a predominant land cover throughout the state of Florida, is now most common to this area. The highest elevation in Florida, all 291 vertical feet, is here, as well as cliffs and ravines cut by millennium of rainfall. Much of the population lives on farms, in mobile homes, or small "cracker box" houses accessed by long stretches of unpaved clay roads. They are the keepers of a pristine wilderness in an area of rapid urban growth.
The Changing Southeast at the Turn of the 21st Century:
Sherry Bartley* and Dr. Agatino LaRosa

Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

This poster was done as the final assignment for GEOG 3305 – Intro to Cartography at KSU, Fall semester, 2001. It was intended as a vehicle to help us to learn about mapmaking and also the use of the Freehand9 software. We selected the subject of our map and our poster expanded on the area we had chosen to use. I decided to use the Southeastern United States and for the poster, I wanted to show general demographic data for the region for the turn of the century. I decided on the demographic data I chose to show and picked the categories I thought would be of most interest to the people in the class. I downloaded the census data from www.census.gov. I used the historical census data to calculate the urbanization figures. At the time this poster was done, the urbanization figures for the 2000 census had not come out. I searched the Internet for text about the Southeast. I just wanted to give a very brief overview of the area and to cite text that gave a true picture of the region. I searched the internet for photographs to illustrate some of the things referred to in the text that I felt were most picturesque and most representative of the region.
Diabetes and Health Care Facilities in Georgia: Henry Bryan, RPLS* and Dr. Mark Patterson

*Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

Diabetes is a chronic health disease and a growing problem that affects some 15.7 million people in the U.S. or about 5.9% of the population. Some 10.3 million people have been diagnosed with diabetes and there are an estimated 5.4 million people that have not been diagnosed with this disease, yet they have it.

Diabetes is the leading cause of end-stage renal disease, amputations (non-traumatic), blindness and impotence. Yet the Diabetes Control and Complications Trial (DCCT), a large clinical trial of intensive therapy versus standard therapy for people with type I diabetes proved that with intensive management of this controllable disease, many of the risk factors could be minimized and reduced greatly. Further, it had demonstrated that a team approach works best to control diabetes, the most important member of the team being the patient himself or herself.

With these factors in hand, this project set out to examine the diabetic population in Georgia and where were the most diabetics located without healthcare facilities of either acute care facilities (hospitals) and or rural health clinics. Without adequate health care facilities and professionals within a reasonable distance, it is difficult to manage this very treatable chronic disease.

It was found that there were 41 counties in Georgia without acute care facilities or rural health clinics and 31 counties without acute care facilities. There may be some health care available in these counties, but it is probably very limited and certainly do not have the professionals for the team approach recommended. Three counties had over 600 diabetics without health care facilities.

In the study another anomaly was discovered. If using the percentage of diabetics per county and the 1996 U.S. Census Bureau Population figures, there is a greater number of diabetics in each Georgia county than the “1999 Georgia Diabetes Report” published by the Georgia Department of Human Resources, Division of Public Health, pointing to a possible larger diabetic population and more health problems than anticipated.
Tartans of Scotland’s Western Islands: Stephanie A. Roper* and Dr. Agatino LaRosa

Department of Sociology, Geography, and Anthropology, College of Humanities and Social Sciences

This poster is based on Scotland’s colorful history and is designed to display patterns of Scotland’s past predominant clan/families who resided on the western islands of Scotland. The majority of the metadata information sources are from the Internet. There are several web sites that have very differing opinions as to the origin of the tartan thus causing a problem with the reliability of sources. These sources have been carefully reviewed and selection of sites thought to best represent the tartan history has been included in the poster. Some of the most reliable and informative web sites based on the review are: www.tartans.scotland.net (this one provided all of the graphics of tartans for the “Tartan Chart”), www.donaldsons-of-crieff.com (this web site under “Source” has a date of November 2000 and even though not updated recently is deemed reliable), www.tartans.com (provided the reference map and is dated 2001), and www.kintail.co.uk (this web site is the only web site to respond to inquiries regarding copyright and has stated permission could not be given for use of their web site photograph as it is used in all of the company’s publications). Inquiries have also been sent to www.kiltmakers.com and www.mcdonaldcrafts.co.us requesting use of some of their photographs, but no response has been received. The web site, www.electricScotland.com, is outstanding and very informative. This site gives a brief synopsis of its source materials and states that most of the history is from an old encyclopedia, “General History of Highlands,” published approximately 1870, a book titled the “Concise History of Scotland” (whose authors give permission to publish some of its contents), several other antiquaries book sources, and emails received from numerous public institutions and individual persons. While the web site claims to try to check on the sources, it includes a disclaimer that all of the information included in the web site could not be verified.
Organ Pipe Cactus National Monument: Michael E. Nugent* and Dr. Agatino Larosa

Department of Sociology, Geography, and Anthropology, College of Humanities and Social Sciences

This poster is based on a National Park Service thematic map of Organ Pipe Cactus National Monument in Arizona. The objectives of the poster are (1) to describe Organ Pipe Cactus Monument as an ideal place to study the plant life of the Sonoran Desert, and (2) to depict the geographic locations of the 5 plant communities in the park. The methodology for compiling the poster included researching the topic, providing descriptive text, photos and data tables, and then importing and organizing the information in a 24 x 36 inch poster format. Poster information was obtained from the original map and through Internet research. Information compiled included a description of the location, plant life and climate of Organ Pipe Cactus National Monument and 6 JPEG photos of the monument. All components were imported into the poster and arranged in an aesthetically please configuration and the poster was finalized and plotted.

The map in the poster is created using the CAD software Freehand Version 9. The map has been generated using a 4-step process. The 4 steps include (1) the automated digitizing of the original vegetation map, (2) the on-screen digitizing of all included features, (3) the assignment of layering and color filling of all boundary areas and included features, and (4) the organization and adding of final map components. Final map components included a graphic scale, map inlet, legend, title, the map illustration, north arrow, and metadata.
Oklahoma City Tornado Outbreak: How the May 3, 1999 Storms Effected the Area: Meril Moore* and Dr. Agatino LaRosa

Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences

Tornadoes are fascinating wonders of Mother Nature. I have had a very high interest in them for as long as I can remember. The objective of my poster was to show one of these devastating storms. The May 3, 1999 tornado in Oklahoma City was very destructive and the most powerful storm this area has ever seen. I wanted to show the areas most affected by this tornado and the surrounding counties that helped in the relief efforts. I also wanted to include statistics to help illustrate the destruction of this particular storm. The majority of my data came from web sites over the Internet. There are many sites available about this day in Oklahoma history. The Weather Channel’s website was very informative. It contained a special report titled “May 3rd Remembered”, a summary of the May 3, 1999 tornado facts as well as a timeline of the day’s events. An article written by Gregory S. Bohr contained statistics of deaths, injuries and damages from the storm. These can be found at http://www.svcc.edu. The radar image in the poster shows the actual storm cell over Oklahoma City. The hook-echo on the radar is what concludes a tornado. The massive tornado picture was chosen to show the width of the tornado. The Fujita Scale of Tornado Intensity is the scale that measures the intensity of a tornado, with F1 being the least destructive and F5 being the most destructive, based on wind speed and devastation.
Animals held in Captivity are restricted in the amount of activity they can engage in. Over the years Zoos have made steps to improve the captive living environment of their animal residents. Most changes are done in the design and architecture of the habitat enclosures. It is essential that animals held in captivity are given the opportunity to stimulate behaviors of those animals in ways that are similar to the wild. Without this, activity level is low, reproductive success is low and the risk of development of unwanted stereotypical behaviors is high. The object enrichment study conducted on a pair of Giant Pandas (one female, one male) at Zoo Atlanta was done in order to see if the introduction of manipulative objects to the pandas would increase their activity level and decrease the amount of unwanted behaviors the pandas engaged in. In this study, three objects were used: a boomer ball with peas inside, large chunks of ice, and burlap sacks filled with hay. Time of introduction was consistent and introduction was done every other day in order to generate baseline data. The objects used were preselected randomly and there was a total of five introductions for each object. Data were collected using a 1 minute instantaneous sampling method. An ethogram was designed listing 43 behaviors. The behaviors were then categorized into four areas: feeding, resting, play, and all other. The results were consistent with the hypothesis; the overall activity level and exploratory behaviors increased while the enrichment objects were available.
Heat Shock Protein Expression And Regulation of the Endocrine Stress Response in Fish Pituitary Cells:
Victoria Barron*, Rehema Muhindo* Peter Goodnight, Kris Griffith and Dr. A. Lynelle Golden

Department of Biological and Physical Sciences, College of Science and Mathematics

Our objective was to study the relationship between pituitary heat shock protein (HSP-70) expression and pituitary regulation of adrenal cortisol secretion in fish. Primary cultures of sunfish (Lepomis sp.) pituitary cells were grown for 3 days at 27° and divided into a heat stress group (HS) and a control group (CON). HSP-70 expression was increased in the HS group by incubating cells at 32° for 2 hours. CON cells and HS cells were each divided into cells exposed to different levels of cortisol and corticotropin releasing hormone (CRH) to determine if inhibition (by cortisol) or stimulation (by CRH) of pituitary corticotropin (ACTH) secretion is affected by HSP-70 expression. HSP-70 was measured in cell homogenates by immunoblotting. ACTH from culture media was measured by chemiluminescence. The study is ongoing and several preliminary results will be presented. Fish pituitary cells have been cultured successfully. Heat shock proteins have also been measured in pituitary cells. The working hypothesis is that increased HSP-70 will modify the pituitary response to stimulation by CRH and inhibition by cortisol.
Comparison of six serological tests to detect antibodies in human sera to *Borrelia burgdorferi*, the bacterium that causes Lyme borreliosis: R. Chad Siniard* and Donald J. McGarey

*Department of Biological and Physical Sciences, College of Science and Mathematics*

Lyme disease is an infectious disease caused by the bacterium *Borrelia burgdorferi*. The disease progresses into crippling arthritis and neurological deterioration in persons who become infected and are not treated in the early stages. Therefore, it is important that the screening tests used to initially detect infection have adequate sensitivity and specificity. This study was done to determine a prevalence of *Lyme borreliosis* (LB) in Calhoun County, Alabama and to examine variation in the sensitivity and specificity of different serological tests used to detect antibodies to the pathogen. Calhoun County is located in an area reported to have low or no risk of LB; however, previous studies have shown that infected vector (tick), reservoir (deer), habitat and human activity conducive to transmission and disease coexist in this area. Serum samples randomly collected from 450 county residents were screened for antibodies to *B. burgdorferi* using an enzyme-linked immunoassay (Sigma Qualitative Indirect EIA). Three positive and four borderline test results occurred out of 450 tested. None of the positive or borderline samples were positive by a second EIA (IBL, Germany) or by immunoblot (VIRO-BLOT); however, clinical diagnosis of Lyme disease was made in eight of the test subjects prior to or just after testing. In a blind study, 52 of the 450 samples were selected for further analysis using a second immunoblot (Color Dot test, Serodyn), indirect immunofluorescence microscopic assay (IFA; Wampole) and Western Blot Analysis (WB). Seven weak positive results occurred using the Serodyn immunoblot, of which 4 matched the positive/borderline test results of the Sigma ELISA. Six strong and 5 weak reactions (including all positive/ borderline/weak by other tests) occurred when using IFA. Western blot analysis confirmed four of the IFA positive reactions; however, two IFA negatives were found to be positive by WB. The majority of IFA positive reactions were due to non-specific reactivity. Screening for antibodies to *Borrelia burgdorferi* varies greatly depending on the serological test used. If positive test results are accurate, a prevalence of 1.6-2.3% of those tested is inferred.
Generation And Use Of Case Studies For The Teaching Of Medical Genetics: Penni Johnson*, R. C. Martin and Dr. K. A. Fleiszar

Department of Biological and Physical Sciences, College of Science and Mathematics

From 1983 until 1993 over 500 genetic consultations were completed and recorded by KAF. These consultations provide an excellent source of case studies for the teaching of medical genetics. With support from KSU's Student Assistants in Learning and Teaching (SALT) program, a student (RCM) was hired to begin transfer of this information into a database using the software program Progeny 2000. Prior to beginning the data entry, issues of confidentiality were addressed. Selected cases from the years 1985 and 1986 were then entered into pedigree form using this program. Once entered, "blank" pedigrees were generated by modification of the originals. Thirty of these modified pedigrees are being used this spring semester in the teaching of Medical Genetics (Biology 3327). The student was required to obtain information concerning his/her assigned pedigree from the instructor. Students play the role of a genetic consultant and must submit a paper addressing the recommendations that such a consultant would make to this family relative to the specific RFR (reason for referral). At the minimum, these recommendations must include appropriate pre- and postnatal diagnostic tests, explanations of those tests and their risks, risk assessment for family members immediately impacted by the RFR and explanations of the expected prognosis of the disorder involved. In addition to the summary paper, one other disorder manifested in the family must be chosen for a detailed poster presentation. Specific information to be included on this poster is provided in the course syllabus. At the end of the semester, use of these case studies will be assessed. Are they an effective way of teaching about heritable and non-heritable birth defects? What difficulties were encountered in interpreting family information and in relaying information to families about risks and recommendations? If these case studies prove useful, additional cases will be recorded, modified and used in the future for the teaching of Medical Genetics, as well as for General Genetics (Biology 3300) and Biology of Cancer (Biology 4630). Biology 3327 and 4427 are required courses for those students interested in a career in Cytogenetic Technology. Completion of the B.S. degree in Biology with a specialization in cytogenetics allows graduates to be certified as a clinical laboratory specialist in cytogenetics (CLSpCG).
Screening and Locating the Genes for Virulence-associated Enzymes of *Aeromonas hydrophila*: Jodra Lambert* and Dr. Donald. J. McGarey

*Department of Biological and Physical Sciences, College of Science and Mathematics*

*Aeromonas hydrophila* is a gram-negative, motile rod-shaped bacterium, which causes the disease known as hemorrhagic septicemia, ulcer disease or red-sore disease in fish. *A. hydrophila* can cause acute bacterial diarrhea, septicemia, meningitis, endocarditis, corneal ulcers, peritonitis and wound infections in humans. It is reported that several factors contribute to the overall virulence of this bacterium. These virulence factors include an external S-layer, pili, extracellular enzymes such as elastase, hyaluronidase and DNAse and toxins including aerolysin and enterotoxin. *A. hydrophila* strains isolated from ulcer-diseased fish have been shown to possess many of these virulence-associated factors including enzymes that degrade host tissues. Because the pathology of this disease included erosion of skin, muscle and cartilage, it was suspected that *A. hydrophila* produced enzymes able to degrade macromolecules that were vital to tissue structure and integrity. The enzymes that were studied were hyaluronidase, chondroitinase, protease and elastase. One objective of this project was to develop plate assays to detect enzyme activity (or lack of) and then use them in a selective assay to screen for "knock-out" (loss of phenotype) mutants after transposon mutagenesis. It was found that *A. hydrophila* expressed hyaluronidase and chondroitinase only in a CO$_2$ (5%) or anaerobic atmosphere, whereas expression of elastase and general protease were not affected by type of atmosphere. Enzyme activity (for all enzymes) occurred at temperature ranges of 15°, 20°, 25°, 30° and 35°C, although slower reactions were measured as temperatures decreased. Elastase activity was highest in late log phase of growth and independent of pH changes in the medium. Mutants demonstrating a loss of enzyme activity were produced by electroporation of the EZ::TN transposome (Epicentre™) into *A. hydrophila* 1135 wild-type. Mutants displaying loss of elastase activity retained general protease, hemolysis, hyaluronidase and chondroitinase activities. Loss of hyaluronidase activity was accompanied by loss in chondroitinase activity (and vise versa) implying a common *Aeromonas* lyase acts upon both chondroitin and hyaluronan, or common regulatory factors. The genes associated with each activity are currently being located, amplified by PCR and sequenced.
Source water use by Loblolly (*Pinus taeda* L.) and Virginia (*Pinus virginiana* Miller) pines: Allison L. Martin* and Dr. Paula C. Jackson

*Department of Biological and Physical Sciences. College of Science and Mathematics*

We used stable hydrogen isotope compositions (δD) to determine the water acquisition patterns of Loblolly and Virginia pines of various ages growing in a mixed deciduous forest in Northwest Georgia. We compared δD signatures of tree xylem samples with the δD signatures of various potential water sources on the site (e.g. soil samples at various depths and rain, well, and lake water samples). Samples were collected during wet and dry soil conditions to determine if the pines switch water sources depending on water availability. Concurrent measurements of pre-dawn and mid-day leaf water potentials were also determined. Xylem δD-values of *Pinus taeda* (M = -44.50‰, SD = 6.07) and *Pinus virginiana* (M = -49.07‰, SD = 11.28) were similar during wet conditions. However, the average δD-values for each species differed under dry conditions, with xylem water in *Pinus taeda* (M = -63.56‰, SD = .03) displaying a trend towards more negative average values than those of *Pinus virginiana* (M = -37.39‰, SD = 9.96). In addition, our results indicated a relationship between tree size and xylem isotope ratio. For the Loblolly pine, δD-values became more negative as tree circumference increased (r = -.872, p = .128). In contrast, the larger circumferences of the Virginia pine were correlated with less negative δD-values (r = .871, p = .0546). In support of this trend, average midday water potentials taken during dry conditions indicate that young Virginia Pines presented a slightly more favorable water status (-5.5bars) compared to that of young loblolly pines (-8.5bars). Taken together, these results suggest that the two pine species alter their water acquisition patterns depending on soil moisture and use different growth strategies that may allow them to partition resources.
Identification of Chloroplast Proteins: A Laboratory Exercise Developed for Plant Physiology: Kathy S. Diehl*¹, Dr. Dale Lynn Vogelien¹, and Dr. Vicky L.H. Bevilacqua²

Department of Biological and Physical Sciences¹ and Department of Chemistry and Biochemistry², College of Science and Mathematics

The Departments of Chemistry and Biological & Physical Sciences at KSU have undertaken a project to design laboratory exercises for a number of courses that will involve the use of one or more fundamental biochemical techniques (e.g. UV/VIS spectroscopy, protein electrophoresis and nucleic acid technology), the purpose of which is to demonstrate the wide application of these techniques to these two scientific fields. This poster will describe the development of an exercise for Plant Physiology Laboratory (BIOL 4420L) that allows students to study chloroplast specific proteins. The light induced differentiation of etioplasts into chloroplasts and the light induced synthesis of a known chloroplast protein (Rubisco) provides the basis for this study. Pea seedlings were grown in complete darkness and under a 12-hour photoperiod for 9 days, and shoot tissue from each set was extracted for protein. The concentration of protein in each sample was determined using Coomassie Blue Reagent and VIS spectroscopy. Aliquots of each sample containing the same amount of total protein were then subjected to sodium doedecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) in order to separate the numerous proteins in each. Visual comparisons of the resulting protein profiles indicated several protein differences between light and dark grown tissues. Up-regulated, down-regulated and new proteins (9 total) were detected in the protein profile for light grown tissue. The large and small subunits of Rubisco were tentatively identified by molecular weight (55 kDa and 14 kDa, respectively) and comigration with a standard. The relative level of each subunit in dark and light grown samples was estimated directly from stained gels by using Strategene’s ChemiDoc Image Analysis System (which employs VIS spectroscopy). Surprisingly, basal levels of both subunits were detected in dark grown tissues. The level of each subunit was approximately two-fold greater in light grown tissues. An additional study exposed dark grown seedlings to 6, 18 and 24 hours of light in an attempt to document the timing required for induction of Rubisco synthesis. Preliminary results suggest that induction occurs between 18 and 24 hours of light exposure. This new exercise was piloted Fall semester 2001. Class assessment of the exercise will be presented.
Environmental Impact Assessment: A Brief Survey of Selected Sites in Bartow County, Georgia: Ryan Barrett, Kaci Bowers, Tami Dobbs*, Barbara Foster, Daniel Sadler, Andrew Tartaglia, Dr. Donald J. McGarey, Dr. Mark Patterson, and Dr. Daniel J. Williams

Department of Biological and Physical Sciences and Department of Chemistry and Biochemistry, College of Science and Mathematics; Department of Sociology, Geography, & Anthropology, College of Humanities and Social Sciences.

Habitat bio-assessments, water quality analysis and Geographic Information Systems (GIS) can be used to indicate and analyze the degree to which a stream has been impacted. Bio-assessments are based on the premise that the community of plants and animals living in and around a stream reflect the health of a stream. The availability of satellite imaging and GIS software has made land use determination an invaluable resource. Water quality analysis encompasses both chemical and microbial parameters. The current impact assessment project provided sufficient data to distinguish the water quality, ecology, and invertebrate counts between the three sampling sites.
Increased Atmospheric Pressure Supports Shell-less Chick Development: Yetsa Adadevoh*, Fadeyemi Adelakun, Deann Boyd, Paul Kabiru, Hilda Ndirangu, Stephanie Sullivan, and Dr. Army Lester

Department of Biological and Physical Sciences, College of Science and Mathematics

Shell-less embryos cultured in 30% O₂ survive longer than embryos cultured in air, but both show signs of severe dehydration. We hypothesize that a pressurized chamber will support early survivability and decrease dehydration of cultured embryos. Chick embryos were removed from the eggshell, placed in a clear plastic culture vessel, and cultured in a clear plastic pressurized chamber at 38 °C with or without constant airflow. Embryos were monitored daily for survivability, growth, development, and gross abnormalities. Preliminary results indicate that increased atmospheric pressure increases the early survival, growth and development of shell-less embryos with no increase in gross abnormalities. Constant airflow over the embryos led to rapid dehydration and early mortality even when constant pressure was maintained. Embryos cultured in the presence of no airflow showed little evidence of dehydration. Student research supported by a grant from the GA Space Grant Consortium, KSU College of Science and Mathematics Mentor-Protégé Undergraduate Research Program, and Conagra Poultry Co., Canton, GA 30115
The Antimicrobial Effects Of Albumen As A Hypothesis For The Evolutionary Benefit Of Avian Egg Rotation:
Deann Boyd*, Yetsa Adadevoh, Fadeyemi Adelakun, Paul Kabiru, Hilda Ndirangu, Stephanie Sullivan and Dr. Army Lester

Department of Biological and Physical Sciences, College of Science and Mathematics

The rotation of chicken egg is believed to prevent the sticking of the vascular membrane to the eggshell. This study hypothesizes that egg rotation may have evolved as a means of preventing microbial contamination by exposing the pathogens to the lysozyme of albumen. Albumen from fertilized eggs was removed and placed in tubes and contaminated with bacteria or fungi using saline as a control. After 0-14 days of incubation, the albumen was streaked and assessed for bacterial/fungal growth. Results indicated that albumen effectively inhibits the growth of both microbes. It is proposed that when the embryo floats in the albumen, microbes must access the embryos from directly above or encounter the inhibitory effects of albumen. Rotation changes the position of the egg while the position of the embryo inside the egg remains the same. Microbes that start to enter the egg in a direct path to the embryo find themselves in the path of the albumen when the egg is rotated. Thus, the embryo is protected. Student research supported by a grant from the GA Space Grant Consortium, KSU College of Science and Mathematics Mentor-Protégé Undergraduate Research Program, and Conagra Poultry Co., Canton, GA 30115
The Chemistry Changes of Kellog Creek and Lake Acworth Water Due to Seasonal Change: Lynn Frock, Paul Holder*, Daniel Murphy* and Dr. Marina C. Koether

Department of Chemistry and Biochemistry, College of Science and Mathematics

Studies of turbidity, pH, and metal concentrations were made of water samples taken during the summer and late fall of 2001. The samples were taken from Lake Acworth at Lake Acworth beach and Kellogg Creek at the boat ramp. Both areas are known for their recreational use. The metals were determined by Graphite Furnace Atomic Absorption Spectrometry and Flame Atomic Absorption Spectrometry after filtration through a 0.45-micron filter. Comparisons indicate that the lower water level during the fall causes an increase in the concentrations of soluble metals as well as turbidity. In addition, variations do occur with storm events. Comparisons of the results from the two sites are strikingly different.
Nuclear Magnetic Resonance Studies of Cannabinoid Receptor Second Extracellular Loop Peptides in the Absence and Presence of SDS: John H. Brown*, Anna M. Hutchings, Travis P. Albright, Dow P. Hurst, Dr. Vicky L. H. Bevilacqua and Dr. Patricia H. Reggio

Department of Chemistry & Biochemistry, College of Science and Mathematics

The G-protein-coupled receptor superfamily includes the cannabinoid receptor sub-types CB1 and CB2 that are involved in pain signaling and the immune response, respectively. Recent mutagenesis and chimera studies have implicated the second extracellular loops (E2) of CB1 and CB2 in ligand binding. As a contribution toward understanding the role of E2 in the interactions of CB1 and CB2 with cannabinoids, we have initiated structure studies on E2 peptide analogues using nuclear magnetic resonance (NMR) spectroscopy. Based on alpha proton chemical shifts, CB2-E2 and CB1-E2 have random coil conformations in an aqueous environment. The N-terminal half of CB2-E2 in SDS micelles contains an alpha-helical stretch. Preliminary simulated annealing calculations suggest that CB1-E2 in the presence of SDS contains a well-defined turn that includes the CSXXFP sequence shared by the cannabinoid receptors and several orphan receptors. CB2-E2 in the presence of SDS consists of at least two equally populated stable conformations, each having alpha proton chemical shifts consistent with random coil conformations. [Support: NSF DUE-9452027 (VLHB), NIDA DA-03934 (PHR), and Kennesaw State University Mentor-Protege Program (VLHB).]
Determining the Electroactive Functional groups of Imazaquin Herbicide: Natalia McConnell* and Dr. Huggins Z. Msimanga.

Department of Chemistry and Biochemistry, College of Science and Mathematics

Imazaquin, a new class of pre-emptive herbicides called imidazolinones, was characterized via cyclic voltammetry at a hanging mercury working electrode versus a silver/silver ion reference electrode. Its structure contains -CO-, -NH-, and -N= functional groups, which make this molecule a good candidate for a study via electrochemical techniques. At the mercury electrode, this molecule shows three reduction peaks, all of which indicate that the mass transfer is diffusion-controlled. Our goal was to investigate the electrochemical behavior of imazaquin in acetic acid/acetate buffer. We wanted to also determine which functional groups were responsible for the reduction peaks. Cyclic voltammograms were obtained via Ammel 433 A Trace Analyzer. Peak currents were studied versus scan rates in order to establish what scan rate range provided diffusion-controlled mass-transfer. Different molecules containing the same functional groups as imazaquin were also studied. This poster reports our results so far.
Virtual Reality Therapy in Aid of Public Speaking: Jason J. Rives* and Dr. Max M. North

Department of Computer Science and Information Systems, College of Science and Mathematics

The major objective of this research was to investigate the effectiveness of Virtual Reality Therapy (VRT) in the treatment of the fear of public speaking. Two subjects were selected from questionnaires distributed among undergraduate students enrolled at Kennesaw State University. Two assessment measures were used in this study. The first measure used was the Attitude Towards Public Speaking Questionnaire (ATPSQ). The second measure used was the eleven-point Subjective Units of Disturbance (SUD) scale. These measurements assessed the anxiety, avoidance, attitude, and disturbance associated with their fear of public speaking before and after each treatment session. Means and standard deviations of ATPSQ and SUD Pre-treatment and Post-treatment scores of VRT subjects were calculated. Although the mean for self-reported discomfort fluctuated over the five sessions, the mean SUD (mean = 2.37) and ATPSQ (mean = 1.78) for the post-treatment was significantly lower than the mean SUD (mean = 5.17) and ATPSQ (mean = 6.62) for the pre-treatment. The preliminary results show that VRT seems to be an effective method for reducing anxiety in subjects who have a fear of public speaking.
An Investigation of the Challenges in Developing Business Applications for Personal Digital Assistants (PDAs): Kim Parent*, Sean Parent*, Rodney Martinez* and Dr. Meg Murray

Department of Computer Science and Information Systems, College of Science and Mathematics

Wireless technology is setting the trend for new business-critical applications. The Personal Digital Assistant (PDA) is leading this revolution due to the fact that software applications can be written, uploaded and executed on these devices. Even though much hype has appeared in the popular press as to the simplicity of building software that runs on the PDA, there is a lack of applications available to support business initiatives. The purpose of this research study is to investigate the challenges of developing PDA applications that address a particular business need. Specifically the questions to be addressed are:

- How easily can business applications be developed for PDAs?
- How well do existing resources and PDA development environments support the development of PDA business applications?

Through the use of case study analysis, this research project explores the development of three PDA applications designed to address particular business needs. These applications include developing PDA applications to support physician ordering in an emergency room setting, to replace the paper documentation used in responding to service calls in an IT department and providing electronic access to documents and building information as needed by a facilities planning and support operation. The results of this study will provide insights into the time and expertise actually required to build functional PDA applications.
An empirical investigation of delayed growth response in *Escherichia coli*: Nariman Ghoochan*, Dr. Sean Ellermeyer, and Dr. Jerald Hendrix

*Department of Mathematics and Department of Biological and Physical Sciences, College of Science and Mathematics*

Continuous bacterial culture is achieved in a chemostat by the addition of fresh medium at a constant rate. Under such conditions, the bacterial concentration approaches a steady state that depends on the concentration of the limiting nutrient in the medium. The classical mathematical model for continuous bacterial culture assumes that the bacteria respond instantaneously to changes in limiting nutrient concentration. In this study, we compared this model with an alternative model that incorporates a "time lag" parameter to account for the delay in the response of bacterial growth rate to the concentration of the limiting nutrient. We measured the growth of *Escherichia coli* 23716, a prototrophic strain of *E. coli*, under conditions of limiting glucose concentration in a chemostat. The growth of *E. coli* under these conditions was consistent with predictions from the time lag model.
A Mathematical Model of a Smallpox Outbreak: Megan Waier* and Dr. Meghan Burke

Department of Mathematics, College of Science and Mathematics

Smallpox, the only disease eradicated from human infection through public health interventions, is again a concern with the looming threat of bioterrorism. It is essential to have a plan for dealing with an outbreak in a mostly susceptible population. By using differential equations, we can model various plans for preparing for and dealing with such an attack. We can consider vaccination and quarantine; how much vaccine should be stockpiled and how quickly it should be available; and the essential timeline for tracking to earliest cases to prevent an epidemic. This work is supported by a Mentor-Protégé grant through the College of Science and Mathematics.
School of the Arts

From Page to Stage: Directing David Ives' All in the Timing: Dora McCollum*, Kristen Michelle Walker*, Linda Aronoff*, Karen Robinson

Department of Theater, School of the Arts

In November 2001, three student directors and one faculty member embarked upon the project of staging 7 short plays from David Ives' collection of American comedies called All in the Timing. The production was presented in the KSU Studio Theater on February 7-10, 2002. The plays satirize the artifice of language, and human beings' efforts to communicate and connect with one another. The student directors faced the challenge of analyzing and conceptualizing the script; casting and rehearsing actors; and ultimately, presenting the production to an audience. Collaboration and crystal clear communication with one another were crucial throughout the process.

The team of directors began work with a series of roundtable discussions about the plays. Dora McCollum agreed to direct Words, Words, Words and Variations on the Death of Trotsky; Kristen Walker undertook the direction of Sure Thing and A Singular Kinda Guy.

It was important that the directors not only articulate individualized central ideas for each of their short plays, but also agree upon a unifying concept to give the entire evening of plays intellectual and aesthetic coherence. Common themes and motifs that surfaced were language, communication, time, design versus chance, and the potential of language in facilitating or obstructing meaningful connections. For instance, Kristen Walker conceptualized and staged the opening piece, Sure Thing, as a boxing match because this metaphor reflected the characters' contentious verbal quest to find a "sure thing" with one another. In the second piece, Words, Words, Words director Dora McCollum focused on another type of verbal quest: Three actors portray chimpanzees involved in the "famous monkey experiment": Can they, typing randomly into infinity eventually write the masterpiece we know as Hamlet? As for A Singular Kinda Guy, Kristen focused on detailed actor coaching to convey the central character's sincere attempt to find a connection with a kindred spirit to whom he could reveal the "secret" that he is a typewriter! These are but three examples of how early discussions about the plays revealed common motifs that were emphasized by directorial concepts.

The project was notable on several levels. First it represented the first time student directors at KSU have had the opportunity to mount a fully supported departmental production. Second it was a highly effective example of applied learning with its blending of theory, analysis and practice. Third, the project enhanced the directors' understanding of the discipline and craft of the theatrical director.
October Winds: Dan Maner* and Dr. Edward Eanes

Department of Music, School of the Arts

October Winds premiered at Kennesaw State University in Spring 2001. Inspired by a visit to the North Georgia mountains, October Winds was written during a time that Maner had tendonitis in his right hand and therefore had to limit his guitar playing. Since he needed a creative outlet to replace the guitar, Maner turned to composition. This piece reflects Maner's emotional journey while battling what seemed like a career altering injury. The form of the work is ABCA'. The A section begins with a simple opening melody in E minor representing the thoughtful and patient qualities he received from playing the guitar. The B section is faster with complex rhythmic hemiolas and evokes the frustration and uncertainty he felt while overcoming his injury. The C section portrays the beginning of the healing process, which then returns to a variation of the opening melody from the A section representing recovery. This presentation will include photographs of the North Georgia mountains that provided Maner's inspiration as well as manuscript sketches documenting the evolution of October Winds from its early beginnings to the final scored edition. The presentation will also feature a performance of October Winds from a saved edition of the music program Finale, with which Maner originally composed the work.
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