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2001 - The Sixth Annual Symposium of Student Scholars

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The Sixth Annual Symposium of Student Scholars

Recognizing Excellence in Student Scholarship

March 30, 2001
Sixth Annual
Symposium of Student Scholars

March 30, 2001

PROGRAM

9:00 a.m. Welcome
Dr. Nancy King
Vice President for Student Success and
Enrollment Services

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

Presenters at "even" numbered displays will be available to discuss their work from 9:00 to 10:30 a.m.

Presenters at "odd" numbered displays will be available to discuss their work from 10:30 to 12:00 noon.

Performance Schedule:

9:30 a.m. David Chapman, Jr. Keyboard "Variations on a March Theme"
10:30 a.m. David Chapman, Jr. Keyboard "Variations on a March Theme"
11:30 a.m. David Chapman, Jr. Keyboard "Variations on a March Theme"

Reception sponsored by the Honor Society of Phi Kappa Phi

Organizing Committee:
Dr. Vicky Bevilaqua, committee chair, Assistant Professor of Biophysical Chemistry
Dr. Dale Vogelien, Associate Professor of Biology, College of Science & Mathematics
Dr. Mark Patterson, Assistant Professor of Geography, College of Humanities & Social Sciences
Dr. Gary Roberts, Associate Professor of Management, Coles College of Business
Dr. Carol Holtz, Associate Professor of Nursing, College of Health & Human Services
Ms. Leigh Funk, Coordinator of Educational Technology, TRAC Center, Bagwell College of Education
Mr. Laurence Sherr, Assistant Professor of Music, School of the Arts
Ms. Carol Pope, Assistant Director for disAbled Student Support Services, Phi Kappa Phi

Special Thanks to:
Dr. Teresa Joyce, Assistant Vice President for Academic Affairs,
and the staff of the Office of Scholarship and Graduate Studies
Dr. Julia Matthews, Asst. Dean, School of the Arts
Mansour Abusaid, Systems Support Specialist, Bagwell College of Education
KSU Ambassadors
COLES COLLEGE OF BUSINESS

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THE CONTINENTALS

Dean, Daniel; Sharon Visser; Jason Russell; Arvind Sarathy; Brian Jardine
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

The Continentals, a team of students under the guidance of Professor Nancy A. Prochaska, propose to raise funds for the Leukemia & Lymphoma Society. The team consist of five students, Sharon Visser, Brian Jardine, Arvind Sarathy, Jason Russell, and Daniel Dean. The fundraiser is a project in the Management 3100/01 class. All funds raised will be donated for the sponsorship of Laura Braun. She has set a goal to raise four thousand dollars and finish a marathon in Anchorage Alaska for the Leukemia & Lymphoma Society.

The Continentals will raise the funds by holding a raffle. The prize in the raffle will be a Phillips DVD/CD player. Tickets to enter the drawing will be two dollars each. Each member of the Continentals will be responsible for selling a certain number of tickets to reach the goal of having a substantial donation. Team members will sell the raffle tickets to people in the community, taking down contact information. Each team member will donate their time and energy to selling the most tickets possible. Opportunity for selling the tickets will be in our other classes, on campus, to friends and family, and in the workplace. The incentive for people to buy tickets will not only be the popular technological prize, but knowing that the drawing will be raising money for the Leukemia & Lymphoma Society. We will show information about our cause when selling the raffle tickets. Our team will hold a drawing and contact the prizewinner before the date of the symposium. All of the funds generated by the raffle will be donated to Laura Braun. The Continentals, of Kennesaw State University Management 3100/01 class will oversee the results of the raffle. Each member of the team will be accountable for monies received by the raffle constituents and team members will not be eligible for winning the prize.

Our exhibit form will be a poster showing what the Leukemia & Lymphoma society is about. It will give statistics about the disease and go in to detail of what the runners are actually doing and whom they are running for. It will also give contact information for sponsoring our runner who is also a Kennesaw State University student.
CHANGE THE WORLD

Howell, Matthew; John Phillips; Jason Stevens; Nolan Page
Nancy Prochaska, Ph.D., mentor
Coles College of Business; Dept. of Management & Entrepreneurship
DISPLAY: Poster

We are a group of students that are currently enrolled in management thirty one hundred which is being taught by Professor Prochaska. We are now in the process of putting together a service-learning project entitled change the world. We feel that this gives us an excellent opportunity to take our project one step further and enter in this year’s sixth annual symposium of student scholars. We met several times and tossed around many great ideas, but after careful consideration we all felt that our time would be best spent helping the homeless population in our community. It is a problem that many of us see for our own eyes every day. This is especially true for those of us that periodically go to downtown Atlanta. Many people do not realize the startling statistics behind our country’s homeless population. For example, most people do not even realize that an amazing 13.5 million people in the United States alone have been homeless at some point in their lives. This represents an astonishing 5 percent of our country’s total population. To help our community with this problem we have decided to serve dinner to the homeless on the night if February 24. We will be doing this at a shelter by the name of MUST Ministries. It is located at 55 Elizabeth Church Rd. N.E. Marietta. It has been serving the homeless community in our area for around fifteen years. It caters to about sixty people a night and is a non profit organization. It is able to operate through food and money donations from local churches and charities. We will be gathering food from donations that we receive from the communities we live in and then putting together a menu from there. Even though it is a small population of the homeless in our area it will make a big difference to the people there that night, and hopefully set an example that other people will follow in the future.
BIRDS OF A FEATHER

Jolly, Jason; Heather Buskard; Shanna Trotter; Matt Porcelli; Stephanie Owens; Scott Hartsell; Mike Helms
Nancy Prochaska, Ph.D., mentor
Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

We are a team of students from Prof. Nancy Prochaska’s MGT 3100 course. Our group, to which we have designated the title, Birds of a Feather, consists of Heather Buskard, Shanna Trotter, Mike Helms, Jason Jolly, Matthew Porcelli, Scott Hartsell, and Stephanie Owens. As a requirement for the course, we are to design and implement a service learning project called Change the World. Our group has chosen to do a small part through the construction of birdhouses, which we will distribute to elementary schools in the Marietta/Kennesaw area.

One may ask how birdhouses can possibly change the world, or why we have chosen to build birdhouses in an attempt to do so. We live in an area where human population is on a steady rise. Natural living habitat for birds is diminishing rapidly in order to make room for the ceaseless construction of apartment complexes, strip malls, and gasoline stations for the convenience of human beings. By setting up birdhouses in the local area, we will be doing a small part to provide birds with shelter to compensate for natural habitat loss in the local area. More importantly, through the involvement of local elementary schools in our program, we will be providing next generation awareness, and hopefully will be reaching students with an environment-friendly message.

The actual implementation process of our service learning project will begin with research into what species of birds we will be providing housing for. We must consider factors such as which species are local to this area and which species are most impacted by habitat loss.

Once we have narrowed the selection down to a few species of birds, we must research the design and construction of birdhouses for these species. There are many details to consider when it comes to birdhouse construction. Different types of birds have distinct preferences about the shelter they seek. Interior space is an important detail to consider, as is the opening size. There must be enough room inside for the birds to raise their young, yet the inside must remain cozy enough to keep the family warm. The birdhouse opening must be wide enough for the birds to enter and exit, yet must be narrow enough to keep out unwanted guests and predators.

We must also consider the types of materials we will use for the construction of the birdhouses. Some types of wood treatments, paints, and/or glues may be toxic to certain bird species. The birdhouses should be built to look as natural as possible and must blend in with the surrounding environment in order to not attract predators.
Once we have completed the building process, which will be finished throughout the course of the semester, we plan to distribute the birdhouses to a local network of elementary schools. Initially, we will contact the principals of prospective schools to determine if they are interested in our program. Along with their birdhouse, the schools that agree to participate in our program will receive a Birds of a Feather pamphlet, which will provide them with background on who we are and the purpose behind our project.

We feel that the key to making any change to the world lies in creating a lasting impression in the minds of future generations. It is our hope, that by involving elementary schools in a project that is easy, fun, and beneficial to the environment in so many ways, we will be setting a clear example of environmental benevolence to children who will embrace this message and sustain it for years to come.
CLERGY COOK-OFF

McCulloch, Danika; Billie Lynn Brown; Chris Khosravirad; Mary Peake; Jay Wruck; Briton Rotell
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

Our group of “worker bees,” Danika McCulloch, Billie Lynn Brown, Mary Peake, Chris Khosravirad, Briton Rotell, and Jay Wrock are engaged in a Change the World Project for Management 3100. We plan to lead, organize, and control a volunteer project, donating our time, and raising money to make a difference.

We have been in contact with Sharehouse, a shelter that houses and treats battered women. It is a place where women can “hide out,” removing themselves from their unstable environment. These women and their children are provided with the basic food, clothing, and shelter to satisfy their immediate needs after leaving their homes. In most cases, women go back to their abusive homes because they miss their personal belongings and possessions. Sharehouse tries to accommodate their losses with donations and help from volunteers.

We have been speaking with Shirlene Matlock, the director of Sharehouse about the direction of our project. She informed us that Sharehouse has several different programs, depending on what our group was interested in or needed to do for our project. For example, they need volunteers to accompany women to their court dates. The volunteers are there for support in keeping the woman isolated from her husband during her trial. Sharehouse also has a youth program, which keeps children involved in activities during their mother’s absence.

Shirlene asked our group to come up with a date in which we could meet to further discuss the possibilities of our project. We will be meeting with her on February 9th to learn more about the programs Sharehouse offers, and also propose ideas our group has come up with. We are interested in giving our time in several unique ways. For example, bringing animals from the local humane society to have their pictures taken with the children. These women are often without daily care products, such as toothpaste, deodorant, shampoo, and conditioner. We are interested in having a yard sale to raise money so that we can purchase these items to make care packages for them.

This is just a few of the many ideas we plan to discuss in our meeting with Mrs. Matlock. Each of is ready to exchange our ideas with Sharehouse. We are very excited about the direction our project is taking and looking forward to being part of KSU’s Sixth Annual Symposium of Student Scholars!
JUST THE SIX OF US

Plocar, Meridith Lee Moore; Marilee DaSilva; Shawn Clay; Jan Kirst; Sean Higgins
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

A main objective of Professor Prochaska’s Management 3100 class is a service based learning project called “Change the World”. The class is divided into teams of 5-6 members whose responsibilities are to complete a community based project. Team members are expected to manage the project utilizing all functions of management including planning, organizing, leading, and controlling.

Our team consists of the following members: Mariluce Dasilva, Traci Gadbois, Lee Moore-Plocar, Jon Kirst, Shawn Clay, and Sean Higgins. The planning process was a combination of objectives provided to us by our professor and ideas presented by each group member. Our first step as a team was to find a common interest. We all agreed that we wanted to do something to help children. Each team member provided an idea or two for group consideration. The organization function of management allowed us to develop a clearer focus for our project.

As each team member began to research the various ideas and suggestions, we found only one site that would allow us to participate in the children’s lives in the way we desired. As a group, we committed to Aid to Children of Imprisoned Mothers. Our site is in need of books and other educational materials for the children it services. Also, assistance with organization of existing site resources is necessary. Each team member will organize a donor box or call on commercial businesses for donations to our site. We have coordinated a meeting with the site administrators to help us better understand the needs of the children.

Leadership is provided by our professor and by various team members according to the situation. Our enthusiasm for the project is heightened by our consensus to help children. At the suggestion of our professor, we established a set of guidelines to assist us in our attempt to complete the project. Some of the guidelines help to keep group cohesiveness and morale at the highest levels possible.

A large portion of the control function is provided by our professor. We are required to give updates and reports regarding our project. Also, we attempt to benchmark our progress by talking to other groups in our class and checking their progress.

It has been interesting for our group to note that almost every activity surrounding this project has some portion of each managerial function. Through our efforts to plan, we also develop enthusiasm. As leaders come to the front of the team, we see planning objectives and resources allocation needs met. In our attempt to get a good grade and good peer evaluations, controls are obviously working for us. We
anticipate a wonderful and valuable real-life experience with our team and with our site.
SAFE PATH CHILD ADVOCACY CENTER ART SHOW

Razzano, Jonathan D.; Matthew Darcy; Per Marvin; Flint Ward
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

We have decided to work with SafePath Children’s Advocacy Center. SafePath is a non-profit organization that has been in operation for five years. SafePath supports a collaborative approach where involved agencies work as a team to assist children. The staff works primarily with children who have been sexually abused or severely physically abused. The forensic evaluator determines the extent of the abuse and aids in identifying the perpetrator. The counselor helps the child express feelings through therapy or in a group setting so they can heal emotionally and mentally. The Director coordinates the team or professional who work with the child in an effort to proceed with court prosecution. All services are free. SafePath also speaks to school groups and civic groups about prevention and safety, meets with people all over the United States to inspire them to develop a similar organization in their locale and provides extensive training for professionals in the field of child abuse.

Our group will work with SafePath on the development of an annual fund-raiser for the center. What the center is attempting to do is to raise between $5,000 and $10,000 dollars at what would be their first ever children’s art auction. Our group will identify a location, date, time and a theme for the event. The center is gathering art work done by children and then having local framers frame them free of charge. The art work will then be auctioned off or bid upon during the event for the highest amount. The group will be responsible for creative ideas for a theme, a brochure, and setting in order to really get people involved.
FOOD FOR THOUGHT

Scott, Burke; Azilee Chrisman; Fende Eseme; Mindy Layfield
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

Some of the most valuable advice and knowledge comes from the people who have already lived through the "real world" experiences we students are preparing to embark on. This advice is often call 20/20 hindsight. It was Aesop who said; "Good judgment comes from experience, and experience-- well, that comes from poor judgment."

The "Food for Thoughts" idea was created by team CrazyWizdom as part of the Change the World service learning project for their Management 3100 class at Kennesaw State University. Team CrazyWizdom plans to hold a "Food for Thoughts" brunch for some of the residents at Presbyterian Village Convalescent Center on Sunday, March 11th. The plan for the project is to have the student team members bring food for the Center’s residents and to hold the brunch in a relaxed social setting. In return, the students will have the opportunity to tap into some of their community's senior residents' personal and professional experiences by asking specific questions and seeking their advice. As college students, we are curious about the lives of these people and what we can learn from their own experiences.

The members of Team CrazyWizdom will be working directly with the Center’s director in order to develop the scheduling, materials, and appropriate guidelines for the brunch. Team CrazyWizdom will also work with the site in promoting the brunch in order to secure interested senior volunteers to participate in the brunch. Before the brunch, Team CrazyWizdom will prepare a list of questions for approval by the Center’s director.

The "Food for Thoughts" project has two primary goals. First by learning what the senior participants have done or would have done differently in their lives, the members of Team CrazyWizdom hope to gain some valuable knowledge from this shared 20/20 hindsight. Hopefully, this information will enlighten the students on some good judgment regarding some of the experiences they themselves will soon be encountering in their own lives. Furthermore, this 20/20 hindsight might provide the students with the "experience" they need in order to avoid dispensing some poor judgment they might have otherwise if they had not participated in this project. The second goal is to create a strong sense of community values among all of the project participants, instilling a stronger understanding of the importance and the benefits of organizing and participating in philanthropic projects of this kind.
THE FRIENDLIER EARTH FOUNDATION

Shirvani, Shahin; Dina Daoud; Mike Whitman; Matthew West
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

We are students in Professor Nancy A. Prochaska’s Management and Behavioral Science class. We are participating in a service-learning project called “Change the World.” This project is intended to develop our management skills by utilizing the processes of planning, organizing, leading, and controlling. For our project we have decided to help the Paulding County Animal Shelter.

The Paulding County Animal Shelter is a non-profitable animal shelter whose main goal is to rescue unwanted animals. They work with all types of animals and are recently having problems with the short amount of space available for the storage of larger animals. They are in desperate need of some outdoor shelters. However, with their limited amount of funds they can do little about this problem. Fortunately, a member of our team found out about this need and since we are planning a non-profit community improvement organization our group decided to take the task of helping them with what ever we could offer. Two of the members in our team, familiar with the basics of constructions, are able to contribute greatly in the building of the needed shelters as well as the equipment needed for the construction. Other members of our team have extra lumber to use for the construction. Also, one member of our team has connections with a fund raising organization which can raise money to help buy supplies.

Our plan is to build 100 square foot animal shelter which will hold small livestock (goats, pigs, etc...) and larger dogs. The building is required to be a permanent structure that has reasonable aesthetics (basically not an “eye sore”). The materials needed for the shelter will cost approximately $600.00 and the shelter will take approximately three days to construct. Since we have six team members, the labor needed for the construction will be free. We are planning to start construction around mid March in order to allow ample time for fund raising and collection of materials. If extra funds are available at the end of construction then the proceeds will be donated to the animal shelter.
CHANGE THE WORLD: CALVARY CHILDREN'S HOME

Snipes, Tori; April Gardner; Tiffani Kleven; Cheryl Crawford; Jenny Shumard; Scott Fuston; Matt Zlotnick
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

Our group is part of Professor Prochaska’s Management 3100 class. We are doing a Service Learning Project for the class, which is called “Change The World”. We have to come up with a project that would, in some way, better the community. Prof. Prochasca randomly put our class into groups and out of those groups we were to somehow come together and bring variability to the group to come up with a project that we could all relate to. Our group is made up of seven different people. We have agreed upon a project to help the Calvary Children’s Home in Paulding County. We now had to come up with a plan to “change” their world.

We, as a group, have decided to raise money for the Home in order to provide them with a fun activity and spend a day with the children just to get to know them. We plan to have a car wash on February 24th in order to raise donations/money. We are going to have the car wash in a parking lot over in Paulding County. It is going to be free but we are going to tell everyone what we are doing and ask for monetary donations. Our plan is to raise at least $700 which is $100 per person. We are also going to go around to the places that we work and ask for some sort of donation.

On March 3rd, the children are going to be brought to Chuck E Cheeses to meet our group for a day of fun and pizza. We are going to provide each child with some money so they can play games. Then we are going to treat them to a movie that afternoon at Barrett Commons 24. We are going to talk to a manager at the movies to see if we could get a group discount or maybe some sort of donation. With the rest of the money, if there is any left over, we are just going to donate to the Home for whatever needs they may have.

Our goal is to provide a luxury for the children that they may not have the funds to do. We hope to show them that Kennesaw State University wants to make a difference in the community and that they are a special part of that community. This class project gives us a chance to give to the community when sometimes we may not have the time or the support to do. Not only does the community benefit from this but we do as well.
BAGS FOR BATTERED WOMEN

Stanton, Bethany Lynne; Molly Borum; Lauren Humphrey; William Jones; Danny Pepitone; Chad Burchfield
Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

As an exercise in implementing the functions of business management we have developed a local philanthropy project. We will plan, organize, lead, implement, and control a project to benefit our local battered women’s shelter. We will be soliciting donated miniature hygiene products from local hotels as well as from local retail distributors. We will combine one of each type if product into gallon size bags. These will be given to the local shelter and distributed at their discretion to meet the needs of our community. Our presentation at the symposium will depict our process and successes in each of the fore mentioned management functions.
CHANGING THE WORLD ONE CHILD AT A TIME

Williams, Patina L.; Faye Bowman; Ricky Snow; Pavel Semenov; Nick Reser; Ed Womack; Nancy Prochaska, Ph.D., mentor

Coles College of Business; Dept. of Management & Entrepreneurship

DISPLAY: Poster

In an effort to better our local community, our group has decided to make a trip to the pediatric center at Kennestone Hospital. The decision to help people that are suffering from various illnesses stems solely from our team’s desire to make life more enjoyable for others. Providing children with entertainment and individual care will hopefully make them feel at ease. Our goal is to give each child a better feeling about themselves for at least a couple of hours. We believe that the smallest gesture of kindness from one person could become the foundation of an increase in self-esteem in someone else.

In an effort to make the children feel more at ease, we planned to meet with them in a group and have the children assist in decorating cookies. Unfortunately, the children are unable to meet together and some are incapable of eating cookies; therefore, we decided to meet with the children individually. On any given day, there may be anywhere from zero to twenty-one children ranging in age from newborns to seventeen years of age. We are trying to structure the event so all of the patients will find the activity worthwhile and enjoyable.

Along with visiting the children, we will also bring goody bags with items for the children to play with during their stay at the hospital. We intend to provide each child a goody bag and spend quality time talking and playing with him/her. Each group member will help separate the bags and organize them. We will have to bring extra goody items for the children, because we will not know the exact number of children in the center on that day. Just in case some children are not happy with the particular toy found in their bag, we would allow them the opportunity to exchange items. Our group will travel from room to room handing out the goody bags, exchanging stories, and playing games with the children.

Our goal is to make the children feel more at home and put smiles upon their faces. All of the children are experiencing pain and discomfort. That is why we would like to make life a little easier for them. We truly feel that providing each child with friendly faces, laughter, care, friendship, and encouragement makes the day seem brighter. We are in the process of coordinating the date and time of the event with Kennestone Hospital. Currently we are tentatively looking at Sunday, February 18 as the visitation date. Whatever day we decide we will be more than ready to help brighten a suffering child’s day.
THE WEBVAN GROUP, INC.

Duncan, Melissa; Ray Buday; Jaimie Burk; Andrea O’Yog; Brent Floyd; Helen Phan
William R. Forrester, Ph.D., mentor

Coles College of Business, Dept. of Marketing & Professional Sales

DISPLAY: Computer Demonstration

The Internet provides a powerful and convenient medium for consumers to order products and services. As a result of consumers recognizing the benefits of online retailing, consumer purchases via the Internet is swiftly growing with projected online spending expected to be $75 billion by 2002. Webvan Group Inc. is an online grocer serving basic need, the need for food. Webvan, along with other online grocers such as NetGrocer, ShopLink, and Peapod, are trying to cash in on the thriving business promised with online retailing. Although these companies are currently struggling to make a profit due to high start-up costs and other risky management practices, they are attempting to satisfy the demand created by consumers concerned with saving time.

With researchers predicting online spending on food, beauty, and household supplies to be $27.1 billion by 2004, there is a highly competitive market for Webvan. Webvan has seen a substantial growth of 84% in June 2000 from March 2000. Webvan has aggressively pushed its way into the online grocery delivery market with the merging of HomeGrocer and fast strategic expansion into other competitive markets. However, the question Webvan is facing is, are they being too aggressive? It is too early to tell as Webvan is still in the growth phase of the product life cycle and having to spend extensively to gain market share.

Webvan is young and growing, but like many e-businesses, suffering from growing pains. According to researchers, the outlook for online shopping looks encouraging, and if Webvan can market wisely, they should be able to capitalize in the online grocery business.

Through Webvan continues with new investments, such as their merger with HomeGrocer.com and entering new markets, they are not in good financial standing. Their Capacity Utilization and Activity ratios show that Webvan is not, by any means, properly utilizing management’s efficiency or control of assets. Thus, Webvan is not currently showing a profit. However, if needed, they are able to monetize cash assets within one year in order to meet the amount of obligations that must be satisfied within that year. Webvan is able to sell their product efficiently enough to industry standards and distribute their product without much storage time but it seems Webvan needs to take a lesson from NetGrocer and pay more attention to the their cost of production and surrounding factors.
ON-LINE RESOURCES FOR TEACHING MATH IN ELEMENTARY SCHOOLS

Kerr, Deborah
Ronghua Ouyang, Ed.D., mentor

Bagwell College of Education, Dept. of Elementary & Early Childhood Education

DISPLAY: Computer Demonstration

As an education major and an honor student, I am working on an applied learning project under the supervision of Dr. R. Ouyang. This project fulfills one of six requirements of the Kennesaw State University Honors Program and is related to teaching elementary mathematics with the implementation of technology. It is to provide pre-service as well as in-service teachers on and beyond the campus of Kennesaw State with excellent on-line resources of teaching mathematics in elementary schools.

The state of Georgia has established a set of education standards for each public school grade level and subject. It is known as the Quality Core Curriculum (QCC's). These standards serve as a guide for the development of curriculum and lesson plans that assure necessary skill development and learning takes place for each student at each grade level. KSU education majors are challenged to implement these standards in the classroom teaching. In addition, KSU education majors receive challenges to use technology for effective teaching. Technology plays a major role in education today and serves as an additional teaching tool for educators.

This project consists of researching on-line resources, developing a resource home page and providing applicable suggestions to aide teachers in planning lessons and designing activities for teaching mathematics in elementary schools. The QCC standards serve as my guide in locating appropriate websites. Third graders are my specific target audience for this phase of my project. This project will be expanded in the summer of 2001 as I work on my honors capstone project. The expanded project will cover the teaching resources from kindergarten through the fifth grade.
SYNTHESIS OF CONFORMATIONALLY RESTRICTIVE MEFLOQUINE DERIVATIVES

Keel, Suzanne
Al Panu, Ph.D., mentor

Bagwell College of Education; Dept. of Secondary & Middle Grades Education

DISPLAY: Poster

Mefloquine is an effective methanol quinoline anti-malarial compound, which is widely used to fight chloroquine-resistant plasmodium falciparum strains of malaria. The current structure of Mefloquine is not conformationally constrained about the ethanolamine and little is known about the conformational requirements of this class of compounds at the binding site. The purpose of the experiment is to synthesize conformationally restricted derivatives of Mefloquine which would help define the conformational requirements of this class of drugs at the receptor site. The target compounds (8 stereoisomers) incorporate conformational rigidity about the ethanolamine fragment of the molecule without adding to the steric bulk. Once synthesized and tested, a ligand-ligand molecular modeling approach will be used to define conformational requirements for binding.

![Chemical Structures]

Mefloquine

Target Compounds

$R_1 = H, R_2 = Ph$
A MULTI-CULTURAL TEACHING EXPERIENCE FOR A STUDENT NURSE

Clune, Shannon
Carol Holtz, Ph.D., mentor

College of Health and Human Services; B.N. Nursing

DISPLAY: Poster

Trans-cultural nursing has found a place in the hospitals and medical facilities in every city in America. For this project, I have assessed the needs of post-partum mothers in a metro Atlanta hospital and have arranged to conduct a series of teaching sessions. The mothers make up a very diverse group with different experiences and languages. This presents a wonderful opportunity to grow as a student and as a person. Some of the topics include basic newborn care, home safety for a new child, and scheduling immunizations and doctor visits. The participants in the teaching project will be asked to assess the session by completing a ten question survey. They will also receive an infant stimulation toy upon completion of the teaching session. The challenge in this project is to approach an area of nursing where cultural consideration is essential and to create a teaching plan that best fits each individual person and family. This project is not only a requirement for a course, but an opportunity to realize the importance of giving culturally sound care to an increasingly diverse population.
THE EXPERIENCE OF DYING AND CARING AT THE END OF LIFE

Hydock, Kelly
Lois Robley, Ph.D., mentor

College of Health and Human Services; B.N. Nursing

DISPLAY: Poster

The field of health care has made tremendous progress over the past century in prolonging human life through the use of drug therapy, life saving surgery, radiation therapy, and intensive research. However, despite the best efforts of the most brilliant minds, for each and every one of us death is inevitable. More often than not it is a nurse who cares for the person who is facing the end of life. As pivotal care providers during the terminal phase of illness, nurses are in the unique position to assist their patients in having a comfortable death.

In January of 2000, Professor in Nursing Dr. Lois Robley, RN, Ph.D. posed the question, “what does it mean to have a good death and how can we, as nurses, help our patients to experience a good death?” After Institutional Review Board approval a naturalistic qualitative study was begun in an attempt to answer this question. This study seeks to examine, from the perspectives of patients and their caregivers, several aspects of the experience of dying and care. Naturalistic investigation, which places an emphasis on understanding the human experience as it is lived, is conducted through personal interviews with terminally ill patients and their caregivers. The researchers seek to examine the physical, psychological, social, and spiritual aspects of dying, including a personal assessment of current needs. These interviews will be transcribed verbatim and analyzed for common themes, subthemes, and defining elements using the analytical method of hermeneutic phenomenology.

As a nursing student with little former experience in the clinical setting I was honored when Dr. Robley offered me the opportunity to be a part of this research project. In conducting interviews I have had the honor of meeting some truly remarkable people, with each and every interview experience leaving me in totally awe of the human spirit. The learning opportunity and exposure to the research process (including analysis of the data) is invaluable to me as a student. Overall this experience has lead to an increased confidence in my ability to care for patients in all stages of their lives through the application of these research findings. I also believe that I will be able to make important contributions to my profession in the future due to my expanded understanding of the research process.
INTERNATIONAL UNDERGRADUATE EDUCATION: A COLLABORATIVE SERVICE LEARNING EXPERIENCE IN HONDURAS, CENTRAL AMERICA

Niehuser, Maria
Sandra M. Hillman, Ph.D., mentor

College of Health and Human Services; B.N. Nursing

DISPLAY: Poster

Nursing international education at the undergraduate and graduate levels has been experienced by only a small number of students. In many instances both professional and personal barriers have prevented students from having a learning experience in a foreign country. One certainty for nursing and nursing education is that nurses of the 21st century will be called upon to deliver population based health care to the international as well as the local community. Typically nursing students and faculty from the United States participate in elective theory and clinical courses abroad. The intent is to expose students to nursing practice, education, health care and the culture of the host country.

During the spring of 2000, as a junior nursing student, I was immersed for almost two weeks in a service learning project at a mission in Honduras, in Central America. Honduras is the second poorest developing country in the western hemisphere. The faculty member, Dr. Sandra Hillman, served as the liaison between the student and the mission. One of my objectives was to do a trans-cultural community assessment of the health care needs of the orphaned residents of the mission population. Upon returning to the United States an independent study elective was developed around the international experience. This experience provided an opportunity for idea exchange, development of a positive rapport between faculty and student and the identification of previous experiences which would help prepare the student for her upcoming time in Honduras.

This international service learning project in Honduras provided a creative force which will drive my lifelong learning, critical thinking and creative problem solving for the global community of the next century. The learning outcomes of this unique international service learning will be addressed in this poster presentation.
NEEDS AND SERVICES OF HOMELESS CHILDREN: AN EXPLORATORY QUALITATIVE STUDY

Burnside-Eaton, Patricia
Anne Hicks-Coolick, Ph.D., mentor

College of Health and Human Services; Dept. of Public Administration & Human Services

DISPLAY: Poster

Developing appropriate service delivery strategies to homeless children is problematic because of the difficulty in identifying the homeless child and the services being rendered to that child. The demographics for the homeless are widely varied and skewed (Wagner, 1993). Even the U.S. Census can't get it right. According to the National Coalition for the Homeless it is estimated that in 1989, 500-750 thousand homeless school-aged children existed, with 43% of these not attending school on a regular basis (Shane, 1992). In a local study of the homeless in Cobb County, Georgia, 91.1% of the 10,980 people serviced between 1987 and 1999 had children (Hicks-Coolick, Peters, & Zimmermann, 2000). The effect of homelessness on children is a hidden, lurking, social problem. The rights of the homeless child are submerged within the rights of the homeless parent. If a homeless mother fails a drug test at her shelter, the child becomes the real victim of homelessness. The child loses his or her shelter because the parent failed and the system pushed them out the door.

This presentation will include current national demographic data on homeless children and a review of an exploratory cross sectional study of 5 homeless shelters within the Metro Atlanta area. This qualitative study will evaluate the current needs and services being offered to homeless children within the homeless shelters. The discussion will include a review of the literature on the need for services for these children and will also address children's rights: the right to an education, the right to adequate health care, and the basic right to a childhood.

Goals of the presentation will be to provide awareness of the current services within the Metro Atlanta area and to evaluate the need for further services and/or funding for needed services. The evaluation will be based on qualitative open-ended face-to-face interviews of key personnel within the homeless provider agencies within Metro Atlanta.
THE EFFECT OF RELATIONSHIP CHARACTERISTICS ON THE USE OF
PSYCHOLOGICAL AGGRESSION

Rahn, Christy L.
Georgina Hammock, Ph.D., mentor

College of Humanities and Social Sciences; Dept. of Psychology

DISPLAY: Poster

In the past, the bulk of the research conducted on aggression in relationships focused on physical aggression occurring between married adults. Recently, however, there has been a growing interest in the occurrence of psychological aggression in a variety of relationships. Psychological aggression has been shown to be a predictor of physical aggression (Stets, 1991). Researchers have also suggested exploring aggression in dating relationships because aggression that occurs when a couple is dating may predict aggression in the marriage (Kasian & Painter, 1992). The purpose of the present study was to explore relationship characteristics among currently involved couples, which may predict the use of psychological aggression in the relationship. The predictors examined were trust, attachment styles, and seriousness and length of the relationship. The goal of the present research was to determine the best predictive model for when an individual is likely to use psychological aggression. It was hypothesized that trust, preoccupied, and fearful attachment styles, along with seriousness and length of relationship would be the best predictive model of the use of psychological aggression. It was also hypothesized that there would be no sex difference. Two hundred forty-seven currently involved males and females from a small northeastern technical college participated in the study. A one way multivariate analysis of variance was run to determine any sex differences. The only variable in which a sex difference was found was trust. Trust was slightly more important for women than for men. No other sex differences were found, thus the model was calculated with males and females together. A multiple regression using stepwise entry of variables was used to regress the use of psychological aggression on trust, attachment styles, length of relationship, and seriousness of the relationship. A significant model was found using the variables of trust, length of relationship, and preoccupied attachment style. Adding length of relationship and preoccupied attachment style to trust increased the variance accounted for by six percent. Thus, the less trust the individual has in the partner, the longer the relationship, and the more preoccupied the attachment, the more the person is likely to use psychological aggression against their partner. The findings indicate that a lack of trust in the partner is the greatest predictor of psychological aggression. Future studies could explore what role these relationship variables may play in the receipt of psychological aggression. It is also suggested that these variables be examined in a dyadic sample.
RECYCLING DROP-OFF CENTERS IN COBB COUNTY

Barrett, Ryan; Gina Harmon
Mark Patterson, Ph.D., mentor

College of Humanities and Social Sciences; Dept. of Sociology, Geography and Anthropology

DISPLAY: Poster

With the limited space for waste disposal there is a growing need for full recycling participation. The service for curbside pick-up of recyclable materials in Cobb County does not include everyone, especially high density housing like the apartment complexes around the University. However there are several drop-off centers located throughout the county that accept various recyclable materials at no charge.

This project utilized Geographic Information software ArcView to produce a user-friendly database to serve as a tool to locate the centers in the county. The centers are divided into themes according to the materials that each center accepts facilitating the user's ability to find a center that is close to the user's residence and that fits the user's recycling needs.
GIS APPLICATIONS IN LAW ENFORCEMENT

Birdsall, Al
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

Law enforcement has been able to stay one step ahead of criminals for a long time thanks to the help of GIS. Police agencies across the country and around the world are able to accomplish this because of the criminals themselves. Every time a crime is committed, it is added to a valuable collection of specific data about that specific type of crime and the history of others similar to it. A GIS is created to help combat crime by taking all of this data and combining it with a map of the affected area to show, visually, where concentrations of different crimes are occurring. This helps law enforcement to more effectively police the community in a variety of ways.

Effective resource allocation is one of the results of a detailed GIS. Being able to see where the pockets of heavy crime are, police agencies can concentrate more manpower to those areas normally resulting in a reduction of incidents. This also helps to reduce a department’s expenses. Unfortunately, crime and criminals will usually relocate in other areas, thus constantly keeping police on their toes. As long as law enforcement has the benefit of geographic information systems, they will remain one step ahead of criminals.

A GIS can help police to see what time of the day most crimes are occurring, which also helps with running a more efficient department. When statistics show that most crimes in a given city happen between 11 p.m. and 5 a.m., it makes more sense to concentrate a police presence within those hours than other times of the day.

Geographic information systems can help bring together law enforcement and other organizations (government or otherwise) to help find solutions to problems quicker and more efficiently. This is evident through the collection and use of accident investigation data. Departments of transportation can work better with the help of this information to better determine problem spots on roadways and possible answers to them faster than otherwise.

Police departments and community organizations can work together with the help of GIS based larceny and home invasion demographic studies to help reduce such crimes. When there is fluid communication between the police and the community they patrol, there is a bigger challenge for perpetrators to find success in criminal activities.

Overall, GIS, and all that it encompasses, is invaluable to law enforcement and everyone which those officers protect.
EXXON MOBIL’S CHAD - CAMEROON PETROLEUM DEVELOPMENT PROJECT

Brokopp, Sherri
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

ExxonMobil is currently involved in the process of building an oil pipeline through the states of Chad and Cameroon in West Africa. The purpose of the project is to develop several oil fields in the land-locked state of Chad, and to have the oil pumped to the coast via an underground pipeline running mainly through Cameroon. Petronas, Chevron, and the World Bank are supplying additional funding for the project. While the oil consortium and World Bank claim these countries will benefit economically from the project, much evidence indicates that Chad and Cameroon will instead fall to corruption, be compromised environmentally, and sustain very high human costs.

The project is to consist of a (mostly) buried pipeline connecting a string of 300 wells that run from Chad’s Doba oil fields through Cameroon and to the Atlantic coast. Development of the oil fields in Doba will require the use of 1400 acres of land for the boring of the wells. A treatment center will be constructed, along with a pumping station, a drilling base, an airport, a small residential area, and 58 km of roads. The offshore portion of the project will consist of a marine export terminal facility 15 km off the coast of Cameroon, which would be connected to the land via marine pipelines.

Oil pipelines pose and environmental hazard wherever they are located. Even if they are constructed with the latest technology, the pipelines could allow 2000 gallons of oil to leak each day without being detected.

The pipeline poses a serious environmental threat to the region. It will make seventeen major river crossings in Cameroon alone, and will run along the Sanage River, one of West Africa’s most important river systems. The pipeline will cross the Mbére River, which ultimately flows into Lake Chad. As a result, any spill that occurs would pollute major water resources that are used by the entire region. Additional threatened areas include the Sahel in Chad, the savanna and mountains of northeastern Cameroon, and the rainforests of southern Cameroon.

Environmental damage in this case is not simply an ecological concern: the human impact will be quite severe. The earth must be protected if those heavily dependent upon it are to be protected. Those most directly affected by the pipeline will likely be the Bakola Pygmies, a traditionally semi-nomadic hunter-gatherer people that live in the tropical rainforest of southeastern and southern Cameroon.
THREATENED AND ENDANGERED BIRDS BY COUNTY IN GEORGIA AND SOME POTENTIAL THREATS TO THEIR SURVIVAL

Crowe, Trena
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

There are two types of threatened birds, and five types of endangered birds located in various counties in the State of Georgia. Releases of toxic chemicals to air, water and land by the manufacturing industry can be considered a threat to their survival.

The bird sitings shown are based on the Georgia Natural Heritage Program Database (GNHPDS), which contains information on the location of rare animals, plants and natural communities in Georgia to the precision of one quarter of a USGS 7.5 minute quadrangle map (quarter quad). In this database, locations of rare plants, animals, and natural communities are called element occurrences or EOs at the Georgia Natural Heritage Program (GNHP). Each EO represents an occurrence or population of rare element. Each EO has various degrees of locational precision. As EO records are entered into the system, a precision code that best matches the precision of the data is assigned. Determination of the quarter quad assignments in GNHPDS takes these precision assignments into consideration. Since this data was only available as an overlapping polygon coverage, I had to create a new theme and determine which birds were located in a specific quad, then digitize points for each EO.

Also, I obtained data from the USEPA, which represents estimated releases of over 300 toxic chemicals to air, water, and land by the manufacturing industry. Releases to land include: landfills; land treatment/application farming; and surface impoundments, such as topographic depressions, man-made excavations, or diked areas. Air releases are identified as either point source releases or as non-point (i.e., fugitive) releases, such as those occurring from vents, ducts, pipes, or a confined air stream. Surface water releases included discharges to rivers, lakes, streams, and other bodies of water.

I concluded that all of the threatened birds and more of the endangered birds are located in the southeastern counties of Georgia. Also, more toxic releases are currently occurring in the northern part of the state. This may mean that the affects of the pollution for the bird habitats won’t be as great for now. However, as construction of new manufacturing facilities continues, encroachment on bird habitats will increase. Therefore, some of our Georgia birds could become extinct unless something is done to prevent it.
A SIMPLE MODEL OF THE IMPACT OF URBAN DEVELOPMENT ON SOPE CREEK WATERSHED

Daniel, Cindy; Matthew Harper
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

Due to increased population growth in the Atlanta Region, streamflows are rising to levels that create deleterious conditions to both the ecology and hydrology of watersheds. In an effort to display the effect of land development on the streamflows in the Sope Creek watershed, this model integrates 1990 and 1995 land use with USGS streamflow data to calculate the percentage of impervious surface over the basin and the percent difference in land use between these two data sets. The resulting data show an increase in all types of development and a decrease in open space, forested areas and agricultural areas. Streamflows in the watershed have reached peak flows due to this increased development and unless ordinances are put in place to encourage smart growth, watershed function will continue to deteriorate.
FAA RADIO TOWERS: VISUAL IMPACTS ON CULTURAL RESOURCES

Hicks, Lacey
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

Beginning in March 1998, Brockington and Associates, Inc. conducted a cultural resources survey of a sample of 67 existing radio tower facilities operated and maintained by the Federal Aviation Administration (FAA) in middle Georgia. The survey was part of a plan developed by the US Army Corps of Engineers (USACE), Mobile District, for the National Historic Preservation Act compliance within the Southern Region of the FAA. Brockington and Associates, Inc., studied this sample of radio tower facilities to assess the nature of possible ongoing impacts to cultural resources by existing FAA facilities. The pilot study survey was drawn in a circumscribed area (generally between Atlanta, Columbus, and Macon, Georgia) that contained a wide variety of physiographic and topographic microenvironments and types of FAA facilities. There are 17 different FAA radio facility types included in the pilot study sample.

This survey developed a set of guidelines for which all other FAA radio tower facilities will be surveyed within Georgia. These guidelines were received by Georgia SHPO and modified to accommodate the Area of Potential Effect (APE) of the radio tower facility visual impact on historic structures by virtue of the height of the radio towers facilities. The APE is defined as “the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist” (Historic Preservation Department 2000).

From the guidelines provided I have constructed a Geographical Information System (GIS) database using the radio towers facilities in the pilot study. This GIS database will serve as a template for which all other FAA radio tower facilities in Georgia will apply. The template will be used for the next part of the plan to survey all relevant FAA radio tower facilities in the state of Georgia. If this portion of the plan using this GIS database is successful this method will be applied state by state to the entire FAA southeast region.

This GIS will be used to screen out all radio tower facilities, which will not be included in the survey. It will also provide information on time management. The database will be used to test the accuracy of locational data receive from FAA. All new information collected during the cultural resources survey including historic and archeological resources will be stored in this database. This task will make the information more accessible than in the past where paper work prevailed.
CAMPUS CRIME

Ohlsson, Kris
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

In the fall 1998 Southern Polytechnic State University became the first university in the state to lease school property to a private company for the purpose of on campus housing. The terms of the lease state that the private company will build facilities to house only students of the University System of Georgia and the those students housed on the property will conform to the rules and regulations of the university system. At the end of the twenty-year lease the property and buildings contained therein will revert to the control of the university. The plan called for a second phase of apartment buildings to be completed four years after the first. The second phase of the University Commons is due to be completed in the summer of 2002 and to begin housing students in the fall semester of 2002.

After the completion of the first phase of apartments in the summer of 1998 there was a well documented increase in the level of criminal activity in the vicinity of the new apartments. Due to this increase in criminal activity some members of the Southern Polytechnic administration became concerned over the prospect of a second phase being built. At the request of the Southern Polytechnic Police Department I have researched the two most common forms of crime on the Southern Polytechnic campus. These two crimes are theft and entering auto. In the category of theft I have included all forms of theft covered under Title 16 statues. These include theft by taking, theft of lost or mislaid property and the theft by conversion. In the category of entering auto I have included the charge of criminal damage in the second degree where the damage involved an unoccupied vehicle. I have included this data in the production of maps and charts which should be helpful in the decision making process of whether to proceed with the University Commons Phase 2.
GEORGIA TEENS WITH STD'S

Wade, Sara
Mark Patterson, Ph.D., mentor

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

DISPLAY: Poster

Due to the increasing number of sexually active teenagers in Georgia, this project shows the number of cases of Sexually Transmitted Disease's (STDs) for teenagers, ages 10-19. These data were collected from the Georgia Department of Human Resources, Public Health Division. In the cases reported, the races and genders were counted together and the reported cases are shown by county. In recent years there has been concern in increasing number of sexually active teenagers and the increase in STDs for these young people. This project attempts to show the increase of teen STDs on a state level.

The data shows an increasing trend in STDs between the years 1993-1995 and 1997-1999. The diseases included are AIDS, Hepatitis B, Chlamydia, Gonorrhea and Syphilis. In the years 1993-1995, the only reported STDs were for AIDS and Hepatitis B. There is a tremendous increase in the number of reported cases for AIDS and Hepatitis B for 1997-1999 and, in 1997-1999, the diseases Chlamydia, Gonorrhea and Syphilis appear prominently. Even with public schools educating teens on the risk of STDs in health classes and Sex Education classes, the increasing rates may indicate the need for a new approach to educating teenagers.

The data found on the web site of Georgia Dept. of Human Resources, Public Health Division, show the number of reported cases listed by county. Some of the data are listed in ranges of <5 (1-4). Since the data are listed by the date of diagnosis and not the date reported, listing the range as <5 compensates for the delay in receiving information or incomplete information.
DETERMINATION OF THE WATER QUALITY IN STREAMS THROUGHOUT BARTOW COUNTY, GA: AN ASSESSMENT USING INDICATOR BACTERIA

Bowman, Jessica
Donald McGarey, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

Determination of *E. coli* density in water is widely accepted as a method for determining contamination by warm-blooded animal feces. The quality limit for *E. coli* is 126/100 ml (geometric mean). Above this limit, the probability of illness through contact with the water increases as the counts increase. The quality standard for drinking water is a strict 0/100 ml. Like *E. coli*, the *enterococci* are bacteria that reside in the intestines of warm-blooded animals and are used to indicate fecal contamination. *Enterococci* provide valuable supplementary data on the bacteriological quality of natural water systems, especially because these bacteria rarely multiply in polluted water and are more persistent (survive longer) than *E. coli*. Determining the species of *enterococci* or fecal streptococci in a water sample may provide general information about the probable animal source, but because some animals share the same species, it cannot be used with a high degree of accuracy. The quality limit for recreational freshwaters is 33 *enterococci*/100 ml (geometric mean). Quantitative analyses of *E. coli* and *enterococci* were performed at 23 different stream sites throughout Bartow county. Ten sites exceeded the 126/100 ml limit for *E. coli* and 20 sites were excessive for *enterococci*. Water quality diminished in association with runoff at nearly all sites. Identification of *enterococcus* species taken with *E. coli* data indicated that the most likely sources of fecal pollution were human and bird. Streams with low *E. coli* concentrations often had elevated *enterococcus* counts, especially *Enterococcus casseliflavus*. It is likely that the sources of *E. casseliflavus* include vegetation and aquatic mollusca and this *enterococcus* is not necessarily an indicator of fecal pollution.
DIET OF BANDED SCULPIN FROM BARTOW COUNTY STREAMS

Brewer, Calley
William Ensign, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

Biological monitoring is an important method for assessing the degree of environmental degradation of aquatic systems. One part of biological monitoring is identifying indicator taxa of fish due to their sensitivity to environmental stresses and toxins. A major trend that can be identified with omnivorous fish is that since they are opportunistic feeders they can survive on the resources available. In this study, I assessed the stomach contents of 45 banded sculpin, Cottus carolinae, from excellent/good quality streams and fair/poor quality streams. The majority of the stomach contents were aquatic invertebrates, while some contained fish, crustaceans and terrestrial organisms. In streams of excellent/good quality there was a greater diversity of organisms. Only in these good quality streams were Coleoptera and Odonata found. The fair/poor streams showed less species diversity, more occurrence of empty stomachs and a lower percent occurrence of the organisms that were identified. The information from this study could lead to developing new methods for monitoring biological communities.
HEAT SHOCK PROTEIN EXPRESSION IN FISH

Griffith, Kris; Peter Goodnight; Kelly Anderson; Justice Haga
Lynelle Golden, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

Changes in water quality in lakes and streams may adversely affect the health and reproduction of fish and other aquatic organisms. The diversity, number, and size of fish are important indicators of water quality within a community. Changes in water quality may also promote cellular expression of stress proteins like heat shock protein 70 (HSP-70). Measurement of cellular responses to environmental changes may provide a more sensitive measure of subtle and/or episodic changes in water quality. Environmental biologists in the department of Biology are involved in watershed assessments for counties in the area. The research described will provide a basis for expansion of watershed studies to include assessment of cellular effects in fish that result from changes in water quality.

The specific objectives of the study were: 1. To verify that HSP-70 can be measured in both laboratory fish (fathead minnows) and also relevant wild fish species found in the Kennesaw area. 2. To determine if HSP70 is expressed specifically in brain and pituitary tissue in wild fish. 3. To determine whether HSP-70 expression in fish is a useful biological indicator of short-term changes in water pH.

Fathead minnows were grown in laboratory tanks and wild fish were sampled from local creeks by electroshocking. Fish were sacrificed by freezing in liquid nitrogen and tissues were homogenized using a motor driven tissue homogenizer. Insoluble cellular debris was removed from the homogenate by centrifugation and total protein concentration of the supernatant was determined. Proteins were separated using polyacrylamide gel electrophoresis (SDS-PAGE) and transferred to nitrocellulose membranes by electroblotting. Heat shock protein 70 was measured by immunodetection using a commercially available HSP-70 antibody.

The study is ongoing and several preliminary results will be presented. We have measured HSP-70 in both fathead minnows and relevant wild species from Kennesaw creeks including sunfish, stonerollers and hogsuckers. We have demonstrated an increased HSP-70 expression in fish following a heat shock stress. We have also verified that HSP-70 is detectable in specific tissues in sunfish including muscle, brain and pituitary gland. Preliminary results of pH exposure studies do not provide evidence of significant pH effects in whole fish. These results provide a foundation for comprehensive studies that will be aimed at using HSP-70 as an early indicator of environmental stress in area streams and lakes.
LINKING STUDENT SCHOLARSHIP TO TEACHING NEEDS

Hall, Michelle D.
Dale Vogelien, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

Many faculty search for new ways to engage and mentor students in scholarship. We will describe a case in which student scholarship produced a new laboratory exercise for a senior level biology course. The role of plant hormones in growth and development is a major topic in plant physiology courses. While acceptable laboratory exercises are plentiful for some topics, most available laboratory exercises dealing with plant hormones are observational, dated in methodology, or require equipment and/or facilities that may not be available. A senior level student developed a laboratory exercise that allowed plant physiology students to study the involvement of abscisic acid (a plant hormone) in a plant’s detection and response to soil water deficit. The student perused relevant literature and assessed the various methodologies for possible use. While an experimental design was selected, the original approach was modified to use the newest method of hormone analysis – the immunoassay. The resulting exercise is a relevant and exciting experiment that is adjusted to meet time and equipment constraints. Benefits to instructor, investigating student, and a plant physiology class that piloted the exercise will be presented. Formal and informal class assessment data on the new exercise will be shared.
LIFE HISTORY STRATEGIES (R- VERSUS K-SELECTION) AMONG MOTHS IN DIFFERENTLY DISTURBED HABITATS

Howard, Stephanie M.; Shannon Hux
Paula Jackson, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

Different evolutionary theories have been used to explain differences in life history strategies among organisms. These ideas seek to explain differences among organisms in traits such as size, weight, longevity, and size and number of offspring produced among others.

In this study we looked into one of the theories on life history strategies, the concept of ‘r- versus K-selection’. We applied this concept of r- versus K-selection to moth species living in two forested habitats with different levels of disturbance. Theory indicates that a higher proportion of r-selected individuals should be observed in more disturbed areas. Because size is one of the most apparent components of the life history of an organism, we used size (dry weight) as an indirect measure of life history strategy. We hypothesized that, on average, the more disturbed habitat (a tract of land located at "The Mill apartment complex") would have a higher proportion of small moths (more r-selected species) compared to the less disturbed site (the forested area next to the arboretum at KSU).

To test this idea we have sampled moths during the summer 2000 and have scheduled spring 2001 sample dates, at times documented to be their brooding seasons. Moths have been attracted using a UV light and white screens. After collection we photograph, identify, dry and weigh all moths. We also record individual moth size, wingspan, color, and use these data to estimate aspect diversity. An additional objective of this study is to develop a protocol for effectively collect moths indigenous to Cobb County, GA and to contribute our findings to the Northern Wildlife Research Center database.
GENERATION OF CASE STUDIES FOR THE TEACHING OF MEDICAL GENETICS

Martin, Regina
Kathleen A. Fleiszar, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

From 1983 until 1993 over 500 genetic consultations were completed and recorded by one of us (KAF). These consultations provide an excellent source of case studies for use in the teaching of a medical genetics curriculum. With support from KSU’s SALT (Student Assistants in Learning and Teaching) program, a student (RCM) was hired to transfer this information into a database using the software program Progeny2000. Before entering the data, the student organized more than one hundred cases into categories based on the primary genetic disorder exhibited within the family. After the cases were organized in this manner, the student then closely reviewed each case and chose a sample group which would best serve as teaching material in a medical genetics course. Cases were then entered into the Progeny2000 program and individual family pedigrees were generated. For teaching purposes, "skeletal" pedigrees were constructed for use by genetics students and the instructor retained the original masters. In order to address issues of confidentiality during the data collection process, the student signed a confidentiality agreement. When entering family data, the student excluded any information involving names, dates of births, or any other identifiers. Thirty of these cases are being used this spring semester in the teaching of Medical Genetics (Biology 3327). Medical genetics students were required to obtain information concerning their assigned pedigrees from the instructor. Students must submit a paper addressing the recommendations that would be made to the consultand of this family relative to their specific RFR (reason for referral). In addition to the summary paper, one other disorder manifested in the family must be chosen for a detailed poster presentation. 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, difficulties in interpreting family information and problems encountered in relaying information to families about risks and recommendations? If so, additional cases will be recorded and used in the future for Medical Genetics as well as General Genetics (Biology 3300) and Biology of Cancer (Biology 4630). This poster presentation summarizes how cases were reviewed, chosen, placed into the database, and then modified for teaching purposes.
The distinctive and easily recognizable “caw” call of the American Crow, *Corvus brachyrhynchos*, is only part of their extensive vocabulary. Vocalizations recorded in the field in the Spring of 2000 from three local populations suggest that each group has its own shared group repertoire. There were significant differences between all three families in total length of 4-element calls (F 15,11 = 7.0521, 0<0.05, F 15,11 = 4.0287, p<0.05, F 15,11 = 2.5481, p<0.05). Furthermore, the shared group repertoires of families whose territories are closer together contained more differences than those farther apart. There were significant differences in frequency (at the point of maximum amplitude) of 4-element calls between the two closest groups (F 14,11 = 5.53, p<0.05; F 14,11 = 3.35, p<0.05) but no significant differences in frequency between the families farthest apart. Playback experiments suggest that these differences may be used for same group recognition. There were no flights toward the speaker when the home population’s call was played compared to a total of 24 flights toward the speaker during alien call playbacks.
DEVELOPMENT OF SCREENING ASSAYS FOR LOCATING THE GENES FOR VIRULENCE ASSOCIATED ENZYMES OF AEROMONAS HYDROPHILA

Thompson, David
Donald McGarey, Ph.D., mentor

College of Science and Mathematics; Dept. of Biological & Physical Sciences

DISPLAY: Poster

*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 suspected 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 that *A. hydrophila* expressed of hyaluronidase, chondroitinase and a serum albumin protease only in a CO2 (5%) or anaerobic atmosphere, whereas expression of elastase and casein protease were not affected by type of atmosphere. Enzyme activity (for all enzymes) occurred at temperature ranges of 15o, 20o, 25o, 30o and 35oC, although slower reactions were measured as temperatures decreased.

"Knock-out" mutants demonstrating a loss of enzyme activity were created by electroporation of the EZ::TN transposome (Epicentre™) into *A. hydrophila* 1135 wild-type. Research is ongoing to locate the transposon insertions in mutants displaying loss of either elastase, protease, hyaluronidase or chondroitinase activity. Locating and sequencing the genes associated with each activity will help to better understand the chromosomal arrangement and regulation of virulence-associated genes. It will also provide the data necessary to compare genes from other microorganisms that encode these enzymes. Finally, the knock-out mutants will be used in fish challenges to establish if the loss of each enzyme activity correlates to an overall loss of virulence.

Symposium of Student Scholars 2001
THE DETERMINATION OF PARA-AMINO-BENZOID-ACID (PABA) AS AN ULTRAVIOLET ABSORBER AND ITS CONCENTRATION IN TWO UNKNOWNS

Barthelme, Erin; Jody Hughes
Marina Koether, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

It is known that ultraviolet radiation ranges in wavelength 200 to 400 nm. UVA rays (320 to 400 nm) infiltrate the deepest layers of the skin and consequently may cause cancer after prolonged exposure. Similarly, UVB (290 to 320 nm) permeates into the skin to cause ill effects. The UVC (200-290 nm) radiation is absorbed by the ozone layer, and thus is not of concern. Consequently, sunscreens and sun blocks were developed with chemical species that absorb radiation in the UVA and UVB wavelengths. The following experiment tested a known sample of Para-Amino-Benzoic-Acid (PABA) in order to determine its effectiveness in absorbing ultraviolet radiation. Two unknown sunscreens were also tested to determine their abilities to absorb harmful UVA and UVB radiation. The PABA was qualitatively analyzed by FT Nuclear Magnetic Resonance (FT-NMR), mass spectrometry and FT-Infrared Spectrometry (FT-IR), as were the two unknowns. This allowed for the spectral comparison of the PABA with the unknowns to determine if similar functional groups were present that would absorb the unwanted wavelengths of radiation. In order to determine the ability of the PABA and the unknowns to absorb ultraviolet radiation, Ultraviolet-Visible Spectrometry was employed to determine the wavelengths where absorption occurred. The results obtained indicate that the sunscreen and the PABA absorb in the UVA and UVB wavelengths. This was due to many factors, mainly the aromatic and other functional groups present, which absorb the radiation and emit the energy as heat.
WHAT'S KEEPING YOUR BUNS FROM BAKING?

Biddle, Carissa D.; Andrew Tartaglia  
Marina Koether, Ph.D., mentor  
College of Science and Mathematics; Dept. of Chemistry & Biochemistry  
DISPLAY: Poster

Sunscreens applied to the skin protect from the effects of the sun by absorbing ultraviolet radiation associated with sunlight. Sunscreens contain a common structural element that is capable of absorbing ultraviolet light. This chromophore is an aromatic or benzene ring functional group. The presence of certain substituents on the benzene ring can lead to great shifts in absorption wavelengths as well as unique mass spectrographs. Infrared, nuclear magnetic resonance, UV-VIS and mass spectroscopy are powerful analytical methods that can be employed in the identification of these structural elements. The spectrographic characteristics of CVS Suntan Lotion which contains Ethylhexyl p-Methoxycinnamate and Oxybenzone and Banana Boat Tanning Oil which contains Padimate O, Oxybenzone and Octyl Methoxycinnamate will be analyzed. The absorbing characteristics of 2,2'-Dihydroxy-4-methoxybenzophenone will be analyzed and compared with those of the CVS Suntan Lotion and the Banana Boat Tanning Oil.
DETERMINATION OF 2-ETHYLHEXYL TRANS-4-METHOXY CINNAMATE IN TWO UNKNOWN SUNSCREENS AND ITS PURPOSE AS AN INGREDIENT IN THOSE SUNSCREENS

Dobbs, Tami; Amanda Avery
Marina Koether, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

Sunscreen and sunblock provide different types of protection from the sun. Sunscreens protect the layers of skin beneath the topmost layer by absorbing the sun's ultraviolet rays. Sunblocks form a layer on the skin that reflects both visible and ultraviolet light. Sunscreens provide chemical protection while sunblocks provide physical protection. The wavelength for visible light is 400-700 nm, while ultraviolet light is 200-400 nm. Ultraviolet light has three classifications: UVA, UVB, and UVC. The UVA rays go deep into the skin; the UVB rays are worse during the summer; and the UVC rays do not reach the earth's surface. The compound 2-ethylhexyl trans-4-methoxy cinnamate is used in commercial sunscreens and sunblocks. Cinnamate is a derivative of cinnamon. It is very useful in protecting against UVB rays, which range from 290-320 nm. Two unknowns, Banana Boat (sunscreen clear) and CVS suntan lotion (sunscreen cloudy), were analyzed for their 2-ethylhexyl trans-4-methoxy cinnamate content. Identification and characterization of 2-ethylhexyl trans-4-methoxy cinnamate in each unknown was determined using Fourier Transform Nuclear Magnetic Resonance Spectrometry (FT-NMR), Fourier Transform Infrared Spectrometry (FT-IR), Mass Spectrometry, and Ultraviolet-Visible Spectrometry (UV-Vis). Both unknowns contained 2-ethylhexyl trans-4-methoxy cinnamate.
THE PROTECTION PROVIDED BY SUNSCREENS AND SUNBLOCKS

Dumas, Julie
Marina Koether, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

Sunscreens and sunblocks are known to protect people from ultraviolet radiation emitted from the sun. Sunblocks reflect and scatter radiation when it is applied to the skin. Sunscreens absorb radiation to varying degrees. They both are composed of several components such as Dioxybenzone Methanone, 2-ethylhexylsalicylate, 2-ethylhexyltrans-4-methoxy-cinnamatte, and para-aminobenzoic acid. Examining the properties of these components will show how they react when radiation strikes them. The properties of these components will be investigated using Gas Liquid Chromatography/Mass Spectroscopy (GC-MS), UV-Vis Spectroscopy, Nuclear Magnetic Resonance (NMR), and FT-IR. These properties are compared with each other to establish which components provide the best protection against harmful radiation.
NUCLEAR MAGNETIC RESONANCE STUDIES OF CANNABINOID RECEPTOR SECOND EXTRACELLULAR LOOP REGIONS IN THE PRESENCE OF SODIUM DODECYL SULFATE MICELLES

Hutchings, Anna, Travis Albright
Vicky L. H. Bevilacqua, Ph.D., mentor
Patricia H. Reggio, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

The G-protein-coupled receptor superfamily includes the cannabinoid receptor subtypes CB1 and CB2 which are involved in the pain signaling pathway. These receptors bind to a class of ligands known as cannabinoids, which include the major psychopharmacologically active compound (-)-trans-D9-tetrahydrocannabinol found in marijuana. While some ligands bind CB1 and CB2 with similar affinities, others are more selective for one receptor or the other. Recent studies indicate some importance for the second extracellular loops (E2) of CB1 and CB2 in interactions with ligands. As a contribution toward understanding the role of E2 in the interactions of CB1 and CB2 with cannabinoids, we initiated structure studies on E2 peptides using nuclear magnetic resonance (NMR) spectroscopy. We previously found that CB2 E2 is a random coil in an aqueous environment, while CB1 E2 contains an a-helical stretch in the presence of sodium dodecyl sulfate (SDS) micelles at 300 MHz. Here, we will describe the first step in the structure determination of each of these peptides in the presence of SDS at 800 MHz. [Support: NSF DUE-9452027, NIDA DA-03934 and KSU College of Science and Mathematics Mentor-Protege Program.]
2-METHYLHEXYL SALICYLATE AS AN ACTIVE INGREDIENT IN SUNSCREENS

Lemmers, Laura M.; Kenna S. Tata
Marina Koether, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

This project involves studying the effectiveness and chemistry of 2-ethylhexyl salicylate when used as a sunscreen. A sample of 2-ethylhexyl salicylate was analyzed by several instrumental techniques including infrared spectroscopy, nuclear magnetic resonance, mass spectroscopy, and ultraviolet radiation. The spectral data collected was compared to that of the spectral data of the active ingredients present in two commercial sunscreens, CVS and Banana Boat. These active ingredients are ethylhexyl p-methoxy cinnamate, oxybenzone, and padimate O. Based on the similarities in their physical and chemical properties, it was determined that 2-ethylhexyl salicylate is comparable to the active ingredients in commercial sunscreens.
ANALYSIS OF PHOSPHORIC ACID ANODIZING SOLUTIONS

Munafo, Charles
Marina Koether, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

Phosphoric acid anodizing solutions contain increasing amounts of dissolved aluminum with use. In the titration of the phosphoric acid to a pH of 4.2, the dissolved aluminum interferes. The true concentration of the phosphoric acid is determined by a correction factor based on knowing the concentration of the dissolved aluminum, which is determined by flame atomic absorption spectrometry (FAAS).

The first objective of this research was to investigate the veracity of the correction factor and the chemistry involved in the interference of the aluminum with the phosphoric acid titration. The research plan used 3 different concentrations of phosphoric acid each analyzed with three different concentrations of dissolved aluminum by pH titration. The aluminum was subsequently analyzed by FAAS. Using the given correction factor, the results were compared to a control containing no dissolved aluminum. Real phosphoric acid anodizing solutions were also analyzed by both titration and FAAS and the results show the increase in aluminum concentration with use over time as expected.

Other objectives have ensued. Copper, also found in the anodizing solution and confirmed by FAAS was found to not interfere with the titration of phosphoric acid at low concentrations. Lastly, lead was analyzed for any interference. Due to its low solubility in phosphoric acid, it too did not interfere.
SQUAREWAVE VOLTAMMETRY: A SUPPORT ELECTROLYTE FOR THE ANALYSIS OF HEAVY METALS IN FOOD SUPPLEMENTS

Tata, Kenna
Huggins Z. Msimanga, Ph.D., mentor

College of Science and Mathematics, Dept. of Chemistry & Biochemistry

DISPLAY: Poster

Scanning electrochemical techniques such as squarewave voltammetry (SQWV) have several analytical advantages, including high sensitivity and fast data acquisition. However, they have a common disadvantage that the current signal generated is dependent on the support-electrolyte, pH, and ionic-strength, as well as the instrumental parameters. Thus most methods based on SQWV tend to optimize these factors for a particular reducible/oxidizable species. This tendency limits the use of SQWV as a scanning technique, capable of simultaneously analyzing several chemicals in a mixture.

The focus of this study was to find a support electrolyte composition that could be used to simultaneously determine several metal ions in a mixture via SQWV. After trying out several electrolytes, potassium thiocyanate (KSCN) was found to be the most promising candidate. The approach was to study the dependence of the peak potentials (Ep) of each metal ion on [KSCN], pH, and ionic strength. A linear least-squares method was used for modeling. The models were in turn used to select a support electrolyte composition that would completely separate the metal ion peak potentials.

This study reports the first results. The results clearly indicate which metal ions are more affected by the named factors. Future work by the same author will focus on validating the results via atomic absorption spectrometry. Real samples of food supplements will also be analyzed.
DEVELOPMENT OF A COUPLED ENZYME KINETICS ASSAY USING A MICROPLATE PHOTOMETER

Tran, Connie; Reem Chabayta
Jennifer L. Powers, Ph.D., mentor
Vicky L. H. Bevilacqua, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

This project focuses on the development of an enzyme kinetics assay using a microplate photometer. This instrument provides two major advantages over the previously used methods: (1) students can perform readings on many different samples in a much shorter time period, and (2) students are exposed to modern laboratory equipment such as they might encounter in a job situation. Lactate dehydrogenase was chosen because it is an enzyme that students are relatively familiar with. It is most commonly associated with the production of lactic acid in muscle tissue during strenuous exercise. Many different approaches to assaying lactate dehydrogenase can be found in the literature. For instance, the reaction can be assayed in either the forward or reverse direction. Potential problems may arise from the instability of the cofactor or product inhibition. For our assay, we are utilizing lactic acid and nicotinamide adenine dinucleotide (NAD+) as the substrate and cofactor. Pyruvate and reduced nicotinamide adenine dinucleotide (NADH) are the products. Since neither product absorbs light in the visible wavelength, we have chosen to use a coupled reaction. Once the NADH is produced, it is utilized in a second reaction catalyzed by diaphorase which yields a reddish-colored formazan product. The amount of product is quantitated by measuring its absorbance at 405 nm. We can then relate the amount of formazan to the amount of NADH produced and calculate a rate constant for the lactate dehydrogenase. Students will perform the kinetic analysis in the presence and absence of various compounds that inhibit the reaction. After analysis of the data, students will be able to identify the type of inhibition occurring. This experiment will be piloted in the near future by students in CHEM 3501L. (Funded in part by: NSF DUE-9950288)
THE SYNTHESIS AND CHARACTERIZATION OF DICHLOROBIS[1,3-DIMETHYL-2(3H)-IMIDAZOLESELENE]ZINC(II)--A POTENTIAL ZINC SELENIDE PRECURSOR

White, Kathleen M.
Daniel J. Williams, Ph.D., mentor

College of Science and Mathematics; Dept. of Chemistry & Biochemistry

DISPLAY: Poster

Many studies have focused on zinc selenide-based material and its application in optical electronics, specifically, laser technology, and semiconductor research. A potential precursor to ZnSe has been prepared and characterized. The compound, dichlorobis[1,3-dimethyl-2(3H)-imidazoleselone]zinc(II), has been synthesized and characterized via standard methods including x-ray crystallography. The results of the crystal structure as well as thermogravimetric analysis will be presented.
TOOLS FOR BUILDING QUALITY SOFTWARE

Atkisson, Garrison
Tom Gooch, M.A., mentor

College of Science and Mathematics; Dept. of Computer Science & Information Systems

DISPLAY: Poster, Computer Demonstration

Creating quality software is often difficult, but it does not have to be. This presentation will discuss tools that can enable software developers to write better software. These tools, including Design Patterns, Extreme Programming, and Design by Contract, help software developers to communicate more effectively with their clients and with one another.
FROM BLUEPRINT TO BRICKS AND MORTAR: BUILDING A COMPREHENSIVE WEBSITE FOR THE KSU HONORS PROGRAM

Bramham, Kimberly
Jorge Perez, Ph.D., mentor
Liza Davis, Ph.D., mentor

College of Science and Mathematics; Dept. of Computer Science & Information Systems

DISPLAY: Computer Demonstration

To keep up with the ever-increasing pace of today’s society, more and more corporations and groups are showing a presence on the “Information Superhighway” known as the Internet. Every day a new webpage, be it personal, professional, or just for fun, shows up on the Internet. Educational systems are another group whose online presence is increasing. The majority of professors and student organizations on campus at Kennesaw State University have their own webpage. The purpose of this presentation is to demonstrate the evolution of a webpage created for one such organization, the KSU Undergraduate Honors Program. My demonstration will convey the steps and procedures required to go from an idea to a fully functioning webpage through design and implementation efforts and will also highlight the usage of online submission forms, which increase the convenience of the webpage.
APPLICATION OF VIRTUAL REALITY IN LEARNING SCENARIOS

Madajewski, Adam; Stephanie Cupp; James Randall Mathis
Max North, Ph.D., mentor

College of Science and Mathematics; Dept. of Computer Science & Information Systems

DISPLAY: Poster

This article is a progress report of research in process that uses virtual reality as a training tool. There is evidence that training conducted in virtual reality can be transferred to real-world tasks. An experimental model was designed to study participants in a “pick-and-place” situation with objects in real and virtual worlds. Participants were asked to pick up objects and place them in a new location in a predetermined sequence. Speed and error rates were measured for both control and experimental groups. The preliminary results conclude that participants in the experimental group performed better than the subjects in the control group. Although this study is still in progress, it appears that the virtual reality training scenario was moderately effective and efficient. Additionally, from observation, participants manifested behavior, that showed a transfer of learning to the real-world situation.
THE CREATION OF AN ORIGINAL MUSICAL COMPOSITION AS INFORMED BY THE ANALYSIS OF FORMAL STRUCTURE IN MASTERPIECES OF WESTERN CLASSICAL MUSIC

Chapman, Jr., David
Laurence Sherr, D.M.A., mentor

School of the Arts, Dept. of Music

DISPLAY: Poster, Computer Demonstration, Performance

Several months of research and analysis were conducted to explore the “theme and variations” compositional technique, especially as regards the structuring of overall form. Bach’s “Passacaglia in C minor” and Beethoven’s “Thirty-three Variations on a Waltz by Diabelli” were the two masterpieces from Western Classical music literature that were analyzed. The analyses of both historic masterpieces aided in structuring the student’s final collection of variations into a cohesive piece of music titled “Variations on a March Theme”. The symposium presentation will include structural charts showing the analyses of the works by Bach and Beethoven and a setup of a linked computer and MIDI keyboard that will display and play back the student’s original composition. The presentation will also include the student composer’s live performance of an excerpt from his composition on a concert piano.
MURAL DESIGN ABSTRACT

DiPietro, Jan
Joseph Remillard, M.F.A., mentor

School of the Arts, Dept. of Visual Arts

DISPLAY: Visual Art

In 2001 Kennesaw State University will complete the construction of a Visual Arts Building in order to accommodate a rising population of Studio Art, Art Education and Graphic Art students. They will begin their education at Kennesaw with only a limited knowledge of Art History and little exposure to artwork outside of Western culture. This mural project is an attempt to inspire students with the diversity and accomplishment of the world’s artists by presenting a dazzling array of creative possibilities and the rich heritage of previous generations. One of the artists’ works may speak to them, leading to further study of the artist’s life and achievements. It may stimulate them to produce their own statement and experiment with new techniques.

The placement of the mural in the entrance of the Visual Arts Building will aid in establishing a sense of identity for the School of the Visual Arts and enhance their relationship with the visitors to the facility. The subject matter of the mural will be useful to the study of art history and art education. A key to the contents of the mural will be available, listing artist, title of work, date of work, and style associated with the period and artist.

The mural is designed as a multi-media presentation. The overall visual image is of an open eye composed of a mosaic of sections from artworks representative of the art history of human cultures all over the world. This global perspective is reinforced by a globe in the place of the pupil of the eye and the similarity to the layout of an old map. Lines that separate the images radiate from the four points of the compass and the ceramic tile border is decorated with the braided design familiar to standard map design. Old maps often used classical references and the four corners of this mural will be wood block printing plates of illustrations of the four elements; Fire, Air, Water and Earth. The Eye-Map will be painted oil on canvas and the Pupil-Globe will be a ceramic disk. The size of the mural is 15 foot by 25 foot.

On completion of the project a presentation of aspects of the execution of the mural could be made to relevant classes such as: Art History, Art Education, Professional Practices, Graphic Design, etc.
ART EVERYWHERE

Dispennette, Jennifer
Carol Mauge-Lewis, M.F.A., mentor

School of the Arts; Dept. of Visual Arts

DISPLAY: Visual Art

Becoming a graphic design major has opened my eyes to so many aspects of design that I took for granted. The clothes people wear, the packaging on the shelves, the labeling on my t-shirts, the newspapers, book covers, logos and symbols, are all designed by graphic designers. Graphic design is one of the most pervasive of art forms. After two years of intense studies in graphic design, I realize that it takes a lot more work than what I had perceived. It is more than mere visual decoration. As a graphic designer, one must evaluate and strategically plan what will be the best way to communicate all these messages with which we are bombarded every day: fliers, posters, billboards and TV commercials are only a few of these.

Most graphic design jobs first start with a client who needs to communicate a message. This could be a service or product, and may need a logo to be used on a business card, an illustration for a poster or a brochure, or perhaps the design of an ad for the newspaper. There are many preliminary hours of researching, drawing, editing, and finally client approval, before implementing the designs. A graphic designer must consider all aspects of the design, for instance, who will be using the product or service, where will the product be seen, and how color, type, layout and images can be used to effectively persuade the potential consumer. Together, the client and graphic designer work to find the best possible visual solution for communicating the client’s message. Type and image together, or alone, must work if there are to be any benefits to the client or the consumer.

My classes in graphic design have strengthened my abilities both verbally and visually, and have enhanced my abilities to combine principle, form and function in aesthetically pleasing ways that work. It takes a lot of patience, teamwork, hard work, and most of all, passion!
THE GRAPHIC OUTLOOK

Jackson, Corinne
Carol Mauge-Lewis, M.F.A., mentor

School of the Arts; Dept. of Visual Arts

DISPLAY: Visual Art

Until my education and experience with graphic design, I never really viewed the world fully and was oblivious to graphic design. As I further my education, I notice more and more about the graphic world around me. Obviously, everything we visually encounter is designed in some way, shape or form. I find myself driving down the expressway looking at billboards or having dinner in a restaurant and critiquing the design of the menu, and wondering about the motivation of the designer. Why was that certain shape, color, or typeface used? Is it effective? Could it be better? As a graphic designer, I am aware of being one among a special group of individuals whose job is to communicate messages or ideas across to people with the use of lines, shapes, fonts, colors and effects. Sometimes we have to capture the attention of the world in only a two to five second window. It is a challenging, yet exciting way to live.

My special preference in graphic design is to make the world really think, by only using a few words and a powerful graphic or image. My courses have prepared me to do this by requiring me to critique the work of other artists, learn the necessary critical thinking skills, as well as computer skills of the programs, and to practice the skills involved in effectively communicating creative graphic expression. I have spent long hours designing and re-designing, evaluating and re-evaluating the projects I have presented in this symposium. A few of the designs were for a non-profit client, but most of these projects are creative assignments from my classes, which have really helped to build and strengthen my conceptual and creative skills, as well as given me a better understanding of presenting work in a professional way.
SUNFLOWER SERIES

Reed, Nancy
Sandra Bird, Ph.D., mentor

School of the Arts; Dept. of Visual Arts

DISPLAY: Visual Art

SUNFLOWER SERIES is a collection of prints made by a variety of printmaking techniques that depict the cycle of a sunflower. Eight prints are bound together in a handmade book; the cover captures the essence of a sunflower garden. The series starts with the anticipated promise of planting seeds, the balance of earthly nurturing, to the abundant reward of the flowers in vigorous bloom. The series ends with the fading life of a single flower as it recycles itself back to seeds.
EXPLORING THE WORLD OF WAYANG

Spivey, Dierdre
Sandra Bird, Ph.D., mentor

School of the Arts; Dept. of Visual Arts

DISPLAY: Poster, Video, Visual Art

In Fall semester of 2000, I was part of a special project related to a course entitled "Curriculum Models and Assessment in the Visual Arts". In an attempt to bring the visual culture of Indonesia to the younger student community, we developed a partnership between KSU and Big Shanty Elementary School. Our class went into two second grade classes and introduced the children to the Indonesian shadow puppet theatre known as wayang kulit. After our professor organized the lessons, we presented information about the art forms and then helped the students create their own shadow puppets. Each of us lead a group of four to five children through the production stages: preliminary drawings, the tag board puppets, and then finally the children had to color and pierce the puppets with a variety of tools. Once the finished products were ready, we laminated and mounted them on paint sticks, stabilizing them with reeds.

The process of creating the visual object was only the first part of the lesson as we further instructed the students in the performance of the artform specific to Indonesian theater. Therefore, after the puppets were ready to use, we then taught the children to manipulate them as the dalang (the Balinese puppeteer) would. They worked hard to follow the story as Dr. Bird narrated. In the meantime, the music class was learning to play Orff and homemade instruments in a Balinese manner, simulating the sounds of the traditional orchestra known as a gamelon. After each class became familiar with the story and music, they then came together and began to mesh the two elements of shadow puppetry and music. The children did a beautiful job of performing and we presented it in December after much rehearsal. It was extremely successful.
REAL AND IMAGINED COMMUNITIES

Huddleston, Lois; Dawn Ortiz
Robert Barrier, Ph.D., mentor

Graduate Studies, Master of Arts in Professional Writing

DISPLAY: Poster, Computer Demonstration

In our Computer Technology in Professional Writing class, Dawn Ortiz and I participated in a joint project comparing real and imagined communities. For my concentration, an imaginary community, I produced a print newsletter that was compatible with the Internet. I chose to work with PageMaker because I wanted to learn how to use the software program. I also wanted to use the fictitious newsletter as a medium to explore some ideas that had recently developed in a novel I have been working on for the past two years. I used humor as a fun, entertaining device to engage the reader's attention.

On the Web version of this newsletter, I linked the characters together so that the reader could readily jump from article to article to see how each character related to others around him and the events taking place. My idea was to use the links to show how many hats each character had to wear in such a small community.
Z-AXIS: MOVING CHILDREN’S LITERATURE INTO ELECTRONIC SPACE

Madej, Krystina
Susan M. Hunter, Ph.D., mentor

Graduate Studies, Master of Arts in Professional Writing

DISPLAY: Poster, Computer Demonstration

Children’s literature existed first as a human speaking, telling stories. Then as the invention of print brought words as text to individual readers, stories no longer relied on an oral storyteller to exist. With print also came images as an accompaniment to the words. Initially, there were few images so that many had to be supplied by the reader’s mind. As picture books came into being, more and more of the images were provided. Readers had less and less to create for themselves.

With the invention of radio, storytellers had a new medium with which to tell their tales orally. When television appeared, stories and pictures as well as sound were supplied in an exciting, moving environment. Each new medium added something to the way storytellers could present their narratives.

Then came the computer. Originally a medium which relied on electronic text, it was a natural extension of print books. But it soon provided storytellers with new ways to present their narratives. Not only does it present text and images well, it also presents sound, animation, and interactivity. With this interactivity comes the opportunity to manipulate within the story. This interaction includes making things talk, making things move, making things change. Each time a story is visited, a different experience can be created.

Most of the stories currently produced for children electronically are text with illustrations. However, some authors have taken the opportunity to explore the technology further. The most avant-garde of electronic books for children make this interactive experience a joyous romp through words, images, and sounds.

Their authors are taking storytelling out of two-dimensional print and into the three-dimensional electronic space—out of the print zone into the participation zone. With interactive stories, readers can not only participate in their minds but they can manipulate physically. Authors not only tell stories, they provide enriched story experiences that have different dimensions which readers can explore.

This presentation takes you from images of oral storytellers, to images of print books, to interactive websites. The intent is to let you see how children’s literature has evolved in an inclusive way, not casting off earlier modes of presentation, but creating new relationships among the different elements. It shows what an exciting future exists for electronic storytelling.
POETRY IN CYBERSPACE

Peitso-Holbrook, Teri; Heather Keen; Mary Ellen Vogel
Robert Barrier, Ph.D., mentor

Graduate Studies; Master of Arts in Professional Writing

DISPLAY: Poster, Computer Demonstration

In this electronic presentation, we take steps to explore the nature of poetry as it transitions into cyberspace. If poetry is to become a part of a new writing culture that is nonlinear and more visually oriented, it must adapt and evolve. Realizing that the highly packed language of poetry can be complicated, we also note that it is brief, which is an advantage in the cyberspace environment. Through a series of three hypertext experiments, we play with the visual and associative aspects of writing online, examining the possible pedagogical, nonfictional, and creative faces of poetry on the Web.

Heather Keen used her teaching background to develop a website for instructing 5th-grade students in the language of poetry. Using works by Shel Silverstein, she created multiple links to guide students through such poetic elements as metaphor, refrain, onomatopoeia, etc. Students first read the poems, then plunge deeper into their makeup, cued by colors and graphic symbols. Hyperlinks lead to definitions of the convention demonstrated, as well as additional examples. It is Heather's contention that driven by their own curiosity and the act of personal involvement allowed by hypertext, students may more readily grasp poetic concepts.

Mary Ellen Vogel used an original work to link poetry to a nonfictional hypertext path. Drawing from the idea that Internet surfing is sometimes accidental, she created a site that operates in two directions: Casual surfers discover poetry while looking for factual information, and poetry readers get an expanded concept of a poem's subject matter by following links to related nonfictional sites. The entry point for her website is a poem about a Bahamian folk artist. By following links, readers can find examples of the artist's works, biographical information, additional anecdotes, and even tips for planning a Bahamian vacation.

Teri Holbrook employed one of her poems to explore the nature of suspense in a hypertext structure. Links take the reader into the poem's backstory, a tale that involves the unintended aftermath of war. Readers are allowed to search the backstory at will, choosing from several links that connect multiple narrative threads. The goal of the piece is to interject suspense into the associative and sometimes meandering network of hypertext design.

All three projects were undertaken with the spirit that rather than shun technology for the familiar and comfortable culture of the book, poets explore the possibilities for elaboration and expansion online.
KSU ENTREPRENEURSHIP CENTER

Grateron, Hernan; Jessica Roca
Gary Roberts, Ph.D., mentor
Dorothy Brawley, Ph.D., mentor

Graduate Studies, Master of Business Administration

DISPLAY: Poster

1. KSU has been selected by the University of Saint Louis to conduct the North American Collegiate Entrepreneurship Award in the Southeast Region (Alabama, Florida, Georgia, and Mississippi). This award is created to recognize all those undergraduate students that are currently enrolled, and at the same time are devoted to their business ventures.

To accomplish this task we had to create a database for all the entrepreneurship professors and centers in the region. After the database was created, we sent to all the specific schools all the required material for the award. Then we have been doing a follow up to see how these schools are doing in the application and information process.

After March 9, date that is the deadline for all the applications to come to us from all the schools, we are going to select the three best Entrepreneur projects.

Following the selection, the winner is going to be sent to Saint Louis for the national competition in summer.

2. The other project at the Center is the research for best practices in entrepreneurship in all the schools in the state of Georgia. Because we are in a beginning stage, we want to adopt all the good and beneficial things in the schools that are working in the Entrepreneurial field. As well, we want to avoid all those practices that have lead to failure some entrepreneurship centers.

So far we have identified all the schools that are linked somehow to entrepreneur activities in the state. In a future stage, we are going to start to research in depth into each one of the schools and Entrepreneurship Centers to create a good profile for our Entrepreneurship Center.
BUSINESS PLAN FOR RODRIGUEZ UPHOLSTERY

Stephens, Bill; Dorothy Guzman; Michael Koontz; Willie Mitchell; Randy Adams; Cathy Wurst; Daniel Vines
Gary Roberts, Ph.D., mentor

Graduate Studies, Master of Business Administration for Experienced Professionals

DISPLAY: Computer Demonstration

A team of executive MBA students worked with the Cobb MicroEnterprise Council and helped one of the current participants with a business plan for his upholstery business. The CMC is a certified Welfare to Work program and this project is an example of how business students are able to work with community organizations to help solve social problems. An additional aspect of this project is that the participant does not speak English and the work needed to be translated to and from Spanish.
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