4-28-1998

Inaugural Undergraduate and Graduate Student Research Colloquium

St. Cloud State University

Inaugural Undergraduate and Graduate Student Research Colloquium

April 28, 1998
Atwood Center Ballroom
4:00 - 7:00 p.m.

St. Cloud State
University
A tradition of excellence and opportunity

Program

Inaugural Undergraduate and Graduate Student Research Colloquium

Table of Contents

List of Participants

Rahim Allana, Keehoon Chan and Jonathan Tang
Advisor: Peter George — *Wireless Digital Voice Transmitter/Receiver*

James Andrews
Advisor: Gerianne Klug — *Women of Courage*

John Baker, Amanda Gaetz, and Jason Rice
Advisors: Steven Frank and Steven Wagner — *Student Fee Survey*

Sarah M. Bersie, Cherryl L. Corso, Jeffrey J. Evans, Tara Beth Schill, and Jeanne A. Schneider
Advisor: Margery M. Whites — *The Professions of Speech-Language Pathology and Audiology: A Survey of SCSU Communication Disorders Students' Knowledge and Attitudes*

Jeffrey Buffington
Advisor: Leslie A.Valdes — *Initiatives and motivations correlated to application for the international studies abroad program at St. Cloud State University*

Jeffrey H. Buffington, Curtis L. Nordgaard, Amy Kodet, Andy Pokomy, Jaime Renner, Jennifer Keelan, Karl Malmberg, and Ryan Brisk
Advisor: Marlene Devoe — *Interpersonal interaction as correlated with satisfaction as an international student.*

Susan Stanton Bullock (Additional Faculty Researchers: Niloufer Merchant, Lalita Subrahmanyan, Nancy Harles, Semya Hakim)
Advisor: Niloufer Merchant — *Retention of Faculty and Staff of Color at St. Cloud State University*

Ryan Carlson, Eric Lovegren and Ross Weber
Advisor: Bruce Ellis — *Computer Controlled Mobile Unit*

Maria Castellanos, Oia Le and Sue LeVoir
Advisor: Sura Lekhakul — *Installation of Programmable Logic Controller (PLC) on a Plastic Injection Molding Machine*

Matt S. Crouch
Advisor: Bassey Eyo — *Transcending Discussion to Attain Dialogic Interaction*

Victoria Dickinson
Advisor: Kate Mooney — *A Practical Approach to the Implementation of FASB Statement No. 131 - "Disclosures about segments of an enterprise and related information."*

Shawn Dokken
Advisor: Susan Douma — *3D-Computer Model of the Future SCSU Library*

Samuel T. Durbin, Robert J. Lunde, and William Schultz
Advisor: Aswartha Narayana — *Wireless Stereo Digital Audio Link*

Michael Esser and Chunny Mattson
Advisors: David Robinson and Mary Richardson — *Density Estimation: Utilizing formulated kernels to estimate a probability density*

Kurt Genereux
Advisor: Ana Lois-Borzi — *The Basic Substance*

Chris Gowin
Advisor: Ana Lois-Borzi — *Consumerism in Suburban America*

Christine J. Grossman
Advisor: Sidney Parham — *The Oedipal Cinematic Hamlets*

Todd P. Huber
Advisor: James Robinson — *English-Only: Myth, Xenophobia, and Control*

Riazul Islam and Yap Yong Ng
Advisor: Nasser Rashidi — *A Mobile, Programmable, Autonomous Robot*

Amy Johnson
Advisor: Gerianne Klug — *Rohypnol*

Amy Keranen and Debbi Paulson
Advisor: David Bacharach — *Determination of Work and Metabolic Cost of Nordic Track's Ctx Rider*

Chin Kim, Roy Johnson, and Richard Gomes
Advisor: J. Michael Heneghan — *Celestial Locator*

Kraig LaFreniere, Joel Anderson, and Bijoy Anose
Advisor: Nasser Rashidi — *Water Treatment System Alarm Dialer*

Jeremy Leitzen, Ryan Przybilla and Yong Chee Wai
Advisor: Peter George — *Voice Enabled Calculator*

K. Lewis, J. Seifert, and B. Priest
Advisor: David Bacharach — *Muscle Activity During Crunches with an Ab-Roller And The Ab-Assist*

Joanne Lim
Advisor: Erika Vora — *The Perpetuation of Asian American Stereotypical Depictions in Popular Culture through American Mainstream Media*

Matt Nordeen, Ooi In Keong, and Lee San Tai
Advisor: Yi Zheng — *The Virtual Digital Communication Laboratory for WWW Applications*

Shannon Ready and Jason Lahr
Advisor: David Bacharach — *Predicting Retro Running Speed from Metabolic Cost of Forward Running*

Michael Schmidt, Teoh Hooi Chuan, and Wong loon Tan
Advisor: Yi Zheng — *Remote Digital Signal Processor System for Distant Learning*

Ed Shermer and Sean Theisen
Advisor: J. Michael Heneghan — *The SIDS Monitor*

Kaaren St. George
Advisor: Marya Teutsch-Dwyer — *Second Language Use in a Language Immersion Experience*

Travis Swanson, Robert Wimmer, and David Duncan
Advisor: Bruce Ellis — *GPS Vehicle Security/Tracker*

Keiko Ukai
Advisor: Erika Vora — *International Student Association: Theoretical Approaches Towards a Successful Multicultural Organization*

Jeffrey Vigness
Advisor: Scott L. Miller — *Events Without a Cause*

Todd Weekley
Advisor: Brenda Wentworth — *Arashi: Storm Drums*

Karen Wenz
Advisor: Steve Klepetar — *The Story of Ira Hayes*

Schedule for Presentations

Concurrent Paper presentations in Ballroom A

4:00-4:14	Wenz, K.	The Story of Ira Hayes
4:15-4:29	Huber, T. P.	English - Only: Myth, Xenophobia, and Control
4:30-4:44	Baker, J., Gaetz, A., & Rice, J.	Student Fee Survey

Concurrent Paper presentations in Ballroom C

4:00-4:14	Buffington, J.	Initiatives and Motivations Correlated to Application for the International Studies Abroad Program at St. Cloud State University
4:15-4:29	Lim, J.	The Perpetuation of Asian American Stereotypical Depictions in Popular Culture through American Mainstream Media
4:30-4:44	Ukai, K.	International Student Association: Theoretical Approaches Towards a Successful Multicultural Organization

Experiential presentation in Ballroom B

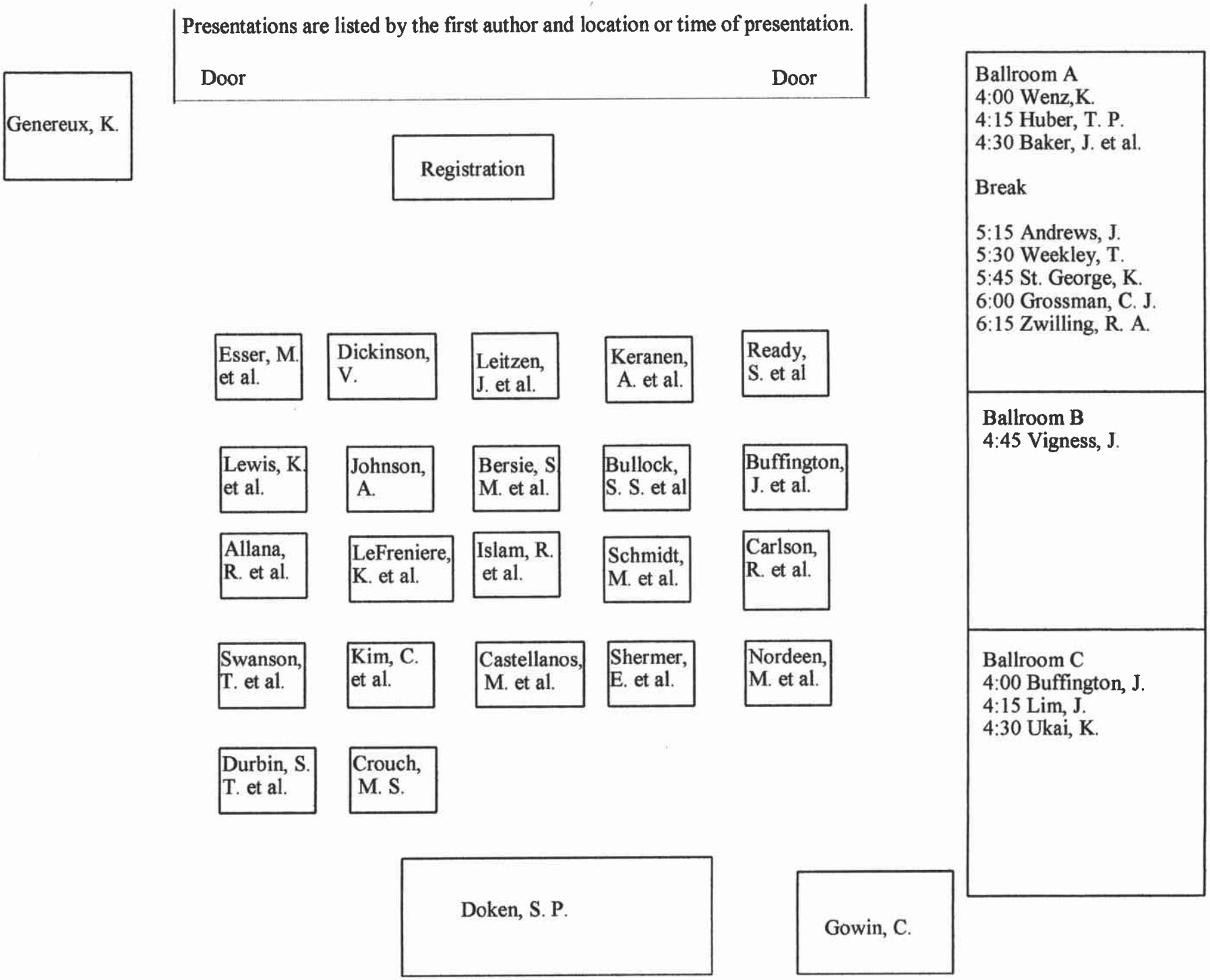
4:45-5:15	Vigness, J.	Events Without A Cause

Paper Presentations in Ballroom A

5:15-5:29	Andrews, J.	Women of Courage
5:30-5:44	Weekley, T.	The Life and Times of Chikamatsu Monzaemon
5:45-5:59	St. George, K.	Second Language Use in a Language Immersion Experience
6:00-6:14	Grossman, C. J.	The Oedipal Cinematic Hamlets
6:15-6:29	Zwilling, R. A.	Behaviors of Children Reflect Their Developmental Stage

Poster Presentations

4:00-7:00	Esser, M. & Mattson, C.	Density Estimation: Utilizing for formulated kernels to estimate a probability density
4:00-7:00	Dickinson, V.	A Practical Approach to the Implementation of FASB Statement No. 131 - "Disclosures about segments of an enterprise and related information"
4:00-7:00	Leitzen, J., Przybilla, R., & Wai, Y. C.	Voice Enabled Calculator
4:00-7:00	Keranen, A. & Paulson, D.	Determination of Work and Metabolic Cost of Nordic Track's CTX Rider
4:00-7:00	Ready, S. & Lahr, J.	Predicting Retro Running Speed from Metabolic Cost of Forward Running
4:00-7:00	Lewis, K., Seifert, J. & Priest, B.	Muscle Activity During Crunches with an AB-Roller and the AB-Assist
4:00-7:00	Johnson, A.	Rohypnol
4:00-7:00	Bersie, S. M, Corso, C. L., Evans, J. J., & Schill, J. A.	The Professions of Speech-Language Pathology and Audiology: A Survey of SCSU Communication Disorders Students' Knowledge and Attitudes
4:00-7:00	Bullock, S. S.	Retention of Faculty and Staff of Color at St. Cloud State University
4:00-7:00	Buffington, J. H., Nordgaard, C. L., Kodet, A., Pokorny, A., Renner, J., Keelan, J., Malmberg, K., & Brisk, R.	Interpersonal Interaction as Correlated with Satisfaction as an International Student
4:00-7:00	Allana, R., Chan, K., & Tang, J.	Wireless Digital Voice Transmitter/Receiver
4:00-7:00	LaFreniere, K., Anderson, J., & Anose, B.	Water Treatment System Alarm Dialer
4:00-7:00	Islam, R., & Ng, Y. Y.	A Mobile, Programmable, Autonomous Robot
4:00-7:00	Schmidt, M., Chuan, T. H, & Tan, W. J.	Remote Digital Signal Processor System for Distant Learning
4:00-7:00	Carlson, R., Lovegren, E. & Weber, R.	Computer Controlled Mobile Unit
4:00-7:00	Swanson, T., Wimmer, R. & Duncan, D.	GPS Vehicle Security/Tracker
4:00-7:00	Kim, C., Johnson, R. & Gomes, R.	Celestial Locator
4:00-7:00	Castellanos, M., Le, O., & LeVoir, S.	Installation of Programmable Logic Controller (PLC) on a Plastic Injection Molding Machine
4:00-7:00	Shermer, E., & Theisen, S.	The SIDS Monitor
4:00-7:00	Nordeen, M., Keong, O. I. & Tai, L. S.	Virtual Digital Communication Laboratory for WWW Applications
4:00-7:00	Durbin, S. T., Lunde, R. J., & Schultz, W.	Wireless Stereo Digital Audio Link
4:00-7:00	Crouch , M. S.	Transcending Discussion to Attain Dialogic Interaction
4:00-7:00	Gowin, C.	Consumerism in Suburban America
4:00-7:00	Genereux, K.	The Basic Substance
4:00-7:00	Doken, S. P.	3-D Computer Model of the Future SCSU Library


Presentations are listed by the first author and location or time of presentation.
Door
Door
Genereux, K.
Registration
Esser, M. et al.
Dickinson, V.
Leitzen, J. et al.
Keranen, A. et al.
Ready, S. et al
Lewis, K. et al.
Johnson, A.
Bersie, S M. et al.
Bullock, S. S. et al
Buffington, J. et al.
Allana, R. et al.
LeFreniere, K. et al.
Islam, R. et al.
Schmidt, M. et al.
Carlson, R. et al.
Swanson, T. et al.
Kim, C. et al.
Castellanos, M. et al.
Shermer, E. et al.
Nordeen, M. et al.
Durbin, S. T. et al.
Crouch, M. S.
Doken, S. P.
Gowin, C.
Ballroom A
4:00 Wenz,K.
4:15 Huber, T. P.
4:30 Baker, J. et al.
Break
5:15 Andrews, J.
5:30 Weekley, T.
5:45 St. George, K.
6:00 Grossman, C. J.
6:15 Zwilling, R. A.
Ballroom B
4:45 Vigness, J.
Ballroom C
4:00 Buffington, J.
4:15 Lim, J.
4:30 Ukai, K.

Rahim Allana, Keehoon Chan and Jonathan Tang

Advisor, Peter George

"Wireless Digital Voice Transmitter/Receiver"

The goal of this project is to construct a wireless voice transmission system using the latest digital technology. Code Division Multiple Access (CDMA) is used to provide service to multiple cellular phone customers. It provides better security, higher capacity, and higher quality than most other wireless transmission systems. The hardware for this project consists of two units, one capable of transmitting and the other capable of receiving voice signals. The voice signal from a microphone is converted to the digital format required by CDMA. The resulting signal is transmitted, received, decoded, and converted back to an analog signal which is sent to a speaker for audio playback.

James Andrews

Advisor, Gerianne Klug

"Women of Courage"

My research project was originally done as an assignment for the Women's Studies class. Originally I was hoping to do a documentary. Not enough time, or resources. My goal was to inform an audience as to some of the contributions made by two less often talked about African-American women. I was watching A&E, and they were doing a biography on Al Capone, so I stole the idea of a biography, instead of a documentary from them. This biography features two strong and determined women who went on to take charge of their lives. These two women are Sojourner Truth, and Madame C. J. Walker. This video (which is hosted and narrated by me) takes the audience through a time line of their respective unique lives. Prior to starting this project I didn't have that much information on either of these tremendous women. I knew that they overcame great obstacles, but it wasn't until I did the research that I discovered the courage and strength that both of these women possessed. And that is where the title comes from (the JA Report was the first choice). To be in those type of living conditions and still achieve is something that I will always appreciate as a fellow African-American.

John Baker, Amanda Gaetz, and Jason Rice

Advisors, Steven Frank and Steven Wagner

"Student Fee Survey"

During January 27-29, 1998 the SCSU Survey conducted a survey of SCSU students for SCSU Student Government Fee Allocation Committee. The SCSU Survey is an ongoing survey research arm of the Social Science Research Institute in the College of Social Sciences.

A scientific random sample telephone survey of currently enrolled SCSU students was done utilizing a Computer Assisted Telephone Interviewing System (CATI). The survey consisted of about 50 variables. Questions were asked relating to student views of the fees they pay in general, and their use and support for some specific uses of the fees. The latter includes the athletic fee, use of various facilities in Atwood, child care, local bus transportation, health care, intramural sports, exercise facilities, etc. Questions were also asked of student preparation and concern about the upcoming switch to semesters.

The sample consists of 422 completed interviews. With samples of 422 interviews the sample error due to sampling and other random effects is approximately plus or minus 4.5% at the 95% level of confidence. This means that if one were to have drawn 20 samples of the state and administered the same instrument it would be expected that the overall findings would be greater or lesser than 4.5% only one time in 20.

The demographics of the sample appear to match census and other known characteristics of the student body very well. The sample is weighted for sex. As is characteristic of telephone surveys, females are slightly over sampled.

The cooperation rate of the survey is 93%. This is about 30%+ points higher than found in general population surveys when done by professional marketing firms. Cooperation rate means that once an eligible household was reached about two-thirds of the respondents agreed to participate in the survey.

Overall, when students were asked whether they were getting their money's worth from student fees, over two thirds indicated they were satisfied. Limited longitudinal analysis from a previous survey also shows a greater degree of satisfaction by students of student fees.

Sarah M. Bersie, Cherryl L. Corso, Jeffrey J. Evans, Tara Beth Schill, and Jeanne A. Schneider

Advisor, Margery M. Whites

"The Professions of Speech-Language Pathology and Audiology: A Survey of SCSU Communication Disorders Students' Knowledge and Attitudes"

Students choose majors for many reasons: an interest in subject matter, employment possibilities upon graduation, or attributes of their chosen careers. The professions in communication disorders (CDIS) are among the fastest-growing in the United States (U.S. Dept. Of Labor, 1996). Because of this trend, the purpose of this study was to seek information about what attracted students at SCSU to a CDIS major, their perceptions about the educational quality of the CDIS Department, and their knowledge about the professions of speech-language pathology and audiology.

All SCSU students with a CDIS major, from students who have recently declared to students near completion of a Master's degree, were surveyed. A preliminary open-ended questionnaire was conducted during individual interviews of 28 CDIS majors. Results were utilized to develop a survey of statements, to which students responded with ratings of agreement or disagreement. There was an 80% response rate, with 124 out of 153 surveys returned.

Results from the survey indicated the majority of respondents selected the CDIS major out of a desire to help people, especially on a one-to-one basis. Respondents generally reported positive experiences within the major, a positive opinion of the field, and a high regard for CDIS faculty. Respondents also answered questions regarding their preferred work setting, clientele, expected salary, and issues facing the CDIS professions.

The results of this survey concurred with previously published studies, but also provided additional information. The CDIS Department at SCSU may use the information to aim recruiting efforts toward potential students who have compatible interests and expectations for a career. The CDIS Department could also use this information as part of programmatic self-assessment of quality indicators to use in reports to administrators and to the public. Other departments at SCSU could use similar surveys in order to further recruitment and self-assessment efforts.

Jeffrey Buffington

Advisor, Leslie Valdes

"Initiatives and Motivations Correlated to Application for the International Studies Abroad Program at St. Cloud State University"

This study will be directed at students who participated in the overseas study program at St. Cloud State University. It will also use a random sample from the remainder of the student body for comparison purposes. The study is primarily designed to determine which types of promotional materials or efforts for the international studies abroad programs are reaching the student body. The study is also designed to determine which motivational factors are involved and thus determine which types of promotional efforts are most likely to persuade. Analysis of motivational information should describe areas in which students who participated in the program differed from those that did not. If levels of social self-efficacy contributed to students' decision to enroll in overseas study programs, there should be a noticeable trend in the types of motivations for participation. The study will also determine if there are significant demographic trait characteristics between those who applied and those who did not.

Jeffrey H. Buffington, Curtis L. Nordgaard, Amy Kodet, Andy Pokomy, Jaime Renner, Jennifer Keelan, Karl Malmberg, and Ryan Brisk

Advisor, Marlene Devoe

"Interpersonal Interaction as Correlated with Satisfaction as an International Student"

This study aims to determine which factors are strongly correlated with satisfaction of experience as an international student in the United States. Level of satisfaction is determined by combining subjects' responses to a variety of questions concerning satisfaction in particular areas. The primary factor expected to correlate with general satisfaction is the level of level of social contact between students and others in a variety of situations. Financial means to satisfy needs, and fulfillment of academic needs are also tested as possible correlates with general satisfaction. Behavioral information in these areas is requested so that we may find correlations between behaviors and satisfaction. We predicted that level and frequency of social interaction will be a strong predictor of satisfaction and produce interaction effects with the orientation of culture of origin.

Susan Stanton Bullock

Advisor, Niloufer Merchant

"Retention of Faculty and Staff of Color at St. Cloud State University"
This ongoing research project has been designed to investigate the factors that influence retention of faculty and staff of color at St. Cloud State University. It explores related perceptions, experiences and recommendations with a view toward identifying these factors. The goal of this research is to present an action plan which will identify specific issues and make specific recommendations for the enhancement of retention of faculty and staff of color at St. Cloud State University.

Research methodology is primarily qualitative in nature and includes focus groups and personal interviews of faculty and staff of color; focus groups and personal interviews of white faculty and staff who identify themselves as having been involved in the focus of this research; and analysis of relevant policies, procedures and studies. Data are being collated in the form of a case study and will be compared to studies and/or successful programs conducted at other institutions in the country as reported in the literature on higher education.

Additional Researchers:

Niloufer Merchant, Lalita Subrahmanyan, Nancy Harles, Semya Hakim

Ryan Carlson, Eric Lovegren and Ross Weber

Advisor, Bruce Ellis

"Computer-Controlled Mobile Unit"

We are designing a computer controlled remote mobile unit. This system uses computer mapping and control with the aid of a video camera, Global Positioning System (GPS) information, and compass information to navigate a prototype vehicle. The computer mapping and control interface was designed using C++. This interface displays a map indicating where the vehicle is, a compass showing its heading, and control buttons used for steering. The vehicle has an onboard computer that manages the information received from the GPS, the compass, and the control information sent to it from the remote computer. Modem and VHS radio transceiver pairs provide data transmission. A video camera and UHF transmitter mounted on the vehicle transmit the video images to a separate monitor positioned near the remote computer. Enhancements to this design would allow exploration of areas unreachable by humans.

Maria Castellanos, Oia Le and Sue LeVoir

Advisor, Sura Lekhakul

"Installation of Programmable Logic Controller (PLC) on a Plastic Injection Molding Machine"

The goal of this research project is to explore the contrast in control systems which use a natural English programming language versus a symbolic programming language. The project is being conducted with Frigidaire, Inc., in a cooperative effort. An existing physical switch control system for a Plastic Injection Molding Machine will be replaced with a Programmable Logic Controller (PLC) utilizing a pictorial language called Ladder Logic. A control system will be developed on a PLC utilizing a natural English language called State Logic.

Industry started using PLCs for their expanded capabilities and as a more reliable source for control of the processes necessary in the manufacturing environment. The symbolic language, ladder logic, has been used in PLC control systems for a few decades. English based programming languages for PLCs have recently been developed. This study will determine how the English based language compares with the ladder logic language.

Matt S. Crouch

Advisor, Bassey Eyo

"Transcending Discussion to Attain Dialogic Interaction"

As our culture faces increasingly important issues of profound magnitude, such as abortion, the death penalty, and racism, it becomes increasingly important that we re-examine the means that we use to arrive at the "truth." Recent research done from a variety of disciplines has discovered that people seem to have an innate inclination towards preserving their opinion, or their "truth." Great thinkers, like Heidegger and Buber, have attributed these behaviors to the human desire to impress what is seemingly the best ideology (one's own ideology) upon others. However, it is this egocentrism which is suppressing a new manner in which to talk about pressing issues. Thinkers like David Bohm are moving discussion to a new level of communication called dialogue. According to Bohm, these two manners of communicating are diametrically opposed in method and outcome. Through dialogue, people are enabled to convey, hear, and consequently see things differently than with discussion. There are four fundamental steps to consider when engaging in dialogue. First, suspending judgments, or

"holding ones opinions more lightly" so as to allow us to see some ones else's point of view. Second. identifying assumptions, meaning that one has to isolate those patterns of thought or paradigms that are pervading their thought regarding the topic. Third, listening, one of the most important criteria of effective communication. Finally, inquiry and reflection — this is the process which allows for questioning to attain additional insight. By using these four steps, a group of people can create an atmosphere that is conducive to dialogue. The study of this method of communication grants communicators the ability to approach controversial topics with a more holistic understanding of the issues under consideration. A dedicated focus towards dialogic interaction elicits the ability to see topics dialectically, in that we gain the advantage of recognizing a variety of perspectives.

Victoria Dickinson

Advisor, Kate Mooney

"A Practical Approach to the Implementation of FASB Statement No. 131 - 'Disclosures about segments of an enterprise and related information'"

The Financial Accounting Standards Board (FASB) has changed the disclosure rules for reporting information by business segment. The new approach focuses on the organizational structure used for internal decision making to define reportable segments for financial reporting. This study provides guidelines for practitioners on how to implement the new standard in their clients' financial statements.

The two standards were also measured against Statement of Financial Accounting Concepts No. 2 which defines the qualitative attributes of accounting information. While the new approach may provide new information for users, the quality of that information may be degraded. The benefits of the new rules include lower preparation cost and enhanced comparability between firms due to the new "enterprise-wide disclosures." However, there may be a compromise in the reliability of the information. Business owners will have increased opportunity for data manipulation which may negate any disclosure of information that could have protected investors against industry or geographic risk.

Lastly, an illustrative example was prepared to demonstrate how financial disclosures change when using the old and new segment reporting methods. This example showed that the determination of reportable segments was simplified under the new standard However, this benefit was offset by uncertainty regarding the determination of the profitability disclosure. In

conclusion, the new standard will be easier to implement, but will not provide significant improvement in disclosure quality for users.

Shawn Dokken

Advisor, Susan Douma

"3D-Computer Model of the Future SCSU Library"

St. Cloud State University will enter the 21st century with a new, state-of-the-art library that will truly be the centerpiece of the campus, both visually and academically. Though it has been widely discussed, few people have seen more than a few sketches of what it will actually look like. My project is a 3D-computer model of this incredible future Learning Resources Center.

Using the same AutoCad blueprints that will be used to actually construct the building, I imported the shapes of walls, windows, and other objects into a modeling program called 3D Studio Max. This amazing software allows me to extrude and render these flat, two-dimensional drawings into a virtual, three-dimensional building built exactly to scale.

Once created, the objects in this virtual world can be moved, rotated, scaled, and animated. Their surfaces can be covered with materials and textures to make them look like real brick, wood, glass, dirt, etc. They can also be given properties such as shininess or bumpiness and whether they will cast or receive shadows and reflections. The virtual cameras can pan, roll, dolly, orbit and zoom just like their real-world counterparts and can be animated to create an architectural 'walkthru' or 'fly-thru.'

I have worked for the past two years as a drafting technician for the Buildings and Grounds department at SCSU maintaining the AutoCAD drawings of the campus buildings. I will graduate this spring with a B.E.S. degree having minors in both Information Media and Data/Voice Communications. As part of my Master's program, I plan to research some of the ways that 3D computer modeling can be combined with computer-based instructional design to create interactive multimedia applications.

Special thanks to *Instructors:* Luther Rotto, Information Media
Gerald Nestel, Industrial Studies
Architects: The Leonard Parker Associates, Minneapolis, MN.

Samuel T. Durbin, Robert J. Lunde, and William Schultz

Advisor, Aswartha Narayana

"Wireless Stereo Digital Audio Link"

Wireless headphones provide freedom of movement and an element of privacy in the home and in the workplace. Wireless transfer of data can be accomplished via infrared light. Recent improvements in infrared technology allow data to be transferred at rates up to 4 million bits per second across short distances. Given these limits, we are transferring data at 2 million bits per second at a distance of two meters.

Our project converts a stereo signal, from a source device such as a TV, VCR, or CD player, into a serial digital stream, which is then transmitted via infrared light. The receiver restores the signal to stereo audio output. Audio is obtained from the stereo outlet on the source device. The audio signal is converted into a digital stream using an analog to digital (A/D) converter. The digital stream is processed to enhance reception accuracy at the receiver. The processed digital stream is used to turn on and off an infrared light in the transmitting device. The signal is transmitted using pulse width modulation to define each bit (short light pulse = 0, long light pulse = 1). A receiver aligned with the transmitter recovers the infrared pulses. The recovered pulses are processed and converted back to an audio signal. This audio signal is amplified and used to drive a set of headphones.

Michael Esser and Chunny Mattson

Advisors, David Robinson and Mary Richardson

"Density Estimation: Utilizing Formulated Kernels to Estimate a Probability Density"

When data is collected, the observations often come in sequence, known as a time series. A common problem is to question the distribution, or "density function," of the underlying population from which the data arise. Our work focuses on how to estimate this density function.

With every recorded observation, certain degrees of uncertainty exist. To ignore this uncertainty would be negligent. On the other hand, to disregard the measurement completely would result in losing potentially valuable information.

Therefore, we quantify the notion of uncertainty by using symmetrical geometric shapes. Each shape assigns a different weight to each level of

deviation around the observation. These shapes will hereafter be referred to as kernels.

Ideally, the shape of the kernel will capture the pattern of all possible values of the estimated observations. The relative efficiencies of some different kernels were determined by testing them against 4 different distributions: 1 symmetrical, 2 right skewed and I left skewed. They were respectively, the normal, the gamma, the exponential, and finally, a left-skewed version of the beta distribution. Each test performed demonstrated which kernel was most efficient for that particular distribution. The best kernels were then applied to real data taken from major league baseball.

Kurt Genereux

Advisor, Ana Lois-Borzi

"The Basic Substance"

As a maturing artist I cannot stress enough the importance of my interest in art, the art community around me, and the people who view art. My belief lies in the knowledge of a grander scale of diversity. Diversity is a growing interest in many parts of our society, not only at St. Cloud State, but all over the world. It's my interest to be part of this growing belief.

My medium in art is mainly painting. I have a series of paintings that deal with a couple of different scopes on a focused theme. It's in my interest to show one or more of my works (with space allowing for it).

Diversity is an important issue that has been revolving around us for a while. My creative interest is to make interconnections with this growing concern of diversity at a basic level. Which I believe in every human exists. My desire to create the very basics from which we derive our sense of primal relation. A relation to natural instincts in which we as humans all have. An interaction that comes from a totality of understanding our relation with diversity at many levels.

This world is getting smaller by the speed of information that will only keep growing with technology. It is my growing concerns as an artist to create the depths in which we find ourselves as equals in society. A society in which the diversity of people will be able to communicate with one another. So that we may sincerely understand the ever growing concerns of diversity within our society.

Chris Gowin

Advisor, Ana Lois-Borzi

"Consumerism in Suburban America"

Examining over consumerism and issues related to being raised in suburban America is the purpose of the research/exhibit. The final piece would be a sculpture consisting of about twenty packages resembling the rows of candy bags found in grocery stores. At the top would be words associated with an item inside the package. The packages would be strung between two large metal objects like a clothes line, and hung with fishing line and hooks. I use plastic packages because it represents America's obsession with packaging both in the literal sense and on a more subtle side the idea that our future fits a certain "package." We envision a certain job, house, car, and lifestyle as part of a overall package or destiny that is sometimes taken for granted. The piece would be supported by three large self portraits that focus on the individual guilt and depression that stem from the ideas addressed in the sculpture.

An example would be an empty toilet paper roll inside the package with the words **WIPE AWAY AMERICA** on top in plain text. This would refer to western societies' monopoly on items such as toilet paper, tissue paper and similar goods. For example, if people in India used toilet paper or Kleenex there would be no trees left in the world. Not only does toilet paper use natural resources in its making, it too is packaged using plastic, dyes for labeling, and the cardboard roll it spins on. It also references the building tensions coming from these countries because in addition to withholding resources, America often exploits the ones it has. Many cultures around the world may feel more comfortable if America was "wiped away."

Christine J. Grossman

Advisor, Sidney Parham

"The Oedipal Cinematic Hamlets"

Berniece Kliman is representative of numerous critics and interpreters who prioritize Laurence Olivier's interpretation of *Hamlet* ever since that film's release in 1948. A brief review of critical literature reveals an ongoing obsession, in cinematic presentations of this play, with Oedipal readings of the text. This detail is significant because, since the 1948 treatment's release, this repeated theme of the Freudian Hamlet has become ". . . fixed in the popular understanding of the play" (Weller 119) as a result of the

mass audience availability of filmed presentations. If, as Kliman writes, "[p]erformances tell us something . . . about social beliefs and conventions. . ." (17), then these sexually neurotic Hamlets reflect a disturbing Oedipal preoccupation in the twentieth century.

Freudian imagery pervades cinematic *Hamlets.* Maybe that is not surprising with the twentieth century love of psychotherapy. But minimizing other dimensions of Shakespeare's tragedy only reduces the complexity, and ultimate interest, of the play. Otherwise, as Simmons asks: "[c]an we honestly say that in the next seventy years some director will not consummate the sexual act between Gertrude and Hamlet, with full frontal nudity? I admit that this is speculative, but I would not want to bet that it will not happen, given the natural progression that we have seen thus far" (116).

Todd P. Huber

Advisor, James Robinson

"English-Only: Myth, Xenophobia, and Control"

The United States of America does not have an official language. The reason for this is that the Continental Congress turned down a proposal to create a government agency that would regulate language. Today, the English - Only movement (as it is now called) is strong and proposes to give America an official language. In order to do so, Congress would have to add an Amendment to the Constitution (proponents are calling it the ELA, the English Language Amendment). The English-Only movement is founded in myth, xenophobia, and control.

One of the most insidious of myths is that those who speak foreign languages (other than English) are either disloyal to America or prone to become disloyal. The proponents of the ELA are obviously not aware of Americas history otherwise they wouldn't use such refutable propaganda to promote their ideas. To name a few: Jefferson, Houston, Austin, Oppenheimer, Einstein, and many more national heroes all spoke one or more foreign languages. Another myth is that the survival of the English language is threatened. Statistics alone prove this to be false.

Xenophobia is another foundation of the English-Only movement. The fundamental concept supporting xenophobia is assimilation. The proponents of the ELA believe that all foreigners should assimilate themselves into the American mainstream. Assimilation is not an American doctrine - diversity, freedom, and multiculturalism are however. Our own university, St. Cloud

State, to support this has multigender/multicultural courses as part of its general education requirements.

One of the most powerful motivational forces behind the English-Only movement is control. A major fear of the English-Only movement is the Hispanization of the American Southwest. To control the masses, the movement has already proposed the banning of translators in hospitals, multilingual 911 operators, voting materials, court reporters and other legal documents, multilingual literature, radio, television and so on.

As is visible from many examples, the English-Only movement is based in myth, xenophobia, and control. The prevailing myths, founded in ignorance, are that Americans who speak foreign languages are disloyal and that the survival of the English language is in jeopardy. Xenophobic ideologies desire assimilation and are based in ignorance and prejudism. The movement also wishes to control the masses by annihilating all multilingual elements in the country. All of these proponents and philosophies are anti-American and chip away at the concept of freedom (linguistic or otherwise) that is so indemnical to the word *America.*

Riazul Islam and Yap Yong Ng

Advisor, Nasser Rashidi

"A Mobile, Programmable, Autonomous Robot"

The increasing expectation and demand for robotic systems to autonomously perform complex tasks in manufacturing, construction, transportation and consumer services are driving this research and senior design project. This mobile robot displays intelligent behavior and responds to external stimuli. The robot is able to detect a bright light source and sounds as well as avoid obstacles it may encounter. It is also designed to generate signals as it encounters any obstacle or makes any move (turn right or left) toward the source or detects the source. The signal then would be transmitted using a broadcasting system and thus enable us to hear its activity from a remote place using an ordinary radio. Applications for this kind of autonomous mobile robot include diverse products like search and transportation vehicles (in this project) as well as lawn mowers, vacuum cleaners, industrial cleaners and construction.

Amy Johnson

Advisor, Gerianne Klug

"Rohypnol"

I am doing a brochure on the drug Rohypnol. I plan to explain what it is and what it does. I will give what laws are out on the drug. What people can do to avoid the drug and where people can go if the drug is used against them. I will also include any other information that I find important when I do my research.

Amy Keranen and Debbi Paulson

Advisor, David Bacharach

"Determination of Work and Metabolic Cost of Nordic Track's Ctx Rider"

The CTX rider provides both an upper and lower body workout as it has both horizontal and vertical pull and press motions. It has five levels of difficulty and two foot positions. The purpose of this study was to estimate the amount of work required for each exercise and to determine metabolic cost of the CTX rider. Twenty-six subjects (14 male and 12 female) ages 20-50 years participated in two exercise sessions using the rider. The first session involved the horizontal, vertical and combination pull exercises with the feet in the lower and then the upper position. The subjects performed six two minute bouts of exercise at three levels of difficulty (low, medium, highest) and with feet in the lower and upper positions. The second exercise session consisted of the same protocol using a press motion instead of the pull. Heart rate and VO2 were recorded each minute. A simple regression was run with level of difficulty as the independent variable and VO2, as the dependent variable. Energy requirements estimated from VO2 at each stage ranged from 2.5-8.0 Kcal/min for a 150 pound individual, the equivalent of walking at a 2.0-4.75 mph pace. At easier levels of difficulty, many of the mean HR values did not reach the 7085% of maximal HR training zone that is optimal for an aerobic workout. When the feet were in the upper position, the exercises placed a greater demand on the upper body and mean HR reached 70-85%; however, most subjects were not able to complete these two minute bouts of exercise. The CTX tested in this study appeared to be a better strength training device than an aerobic one. In order for the CTX to be a good aerobic training device, the intensity of the different exercises would need to be modified to permit exercise of sufficient duration and intensity to enhance the functional capacity of the cardiovascular system.

Chin Kim, Roy Johnson, and Richard Gomes

Advisor, J. Michael Heneghan

"Celestial Locator"

We are building a device that can give the coordinates of a heavenly body to the user of a telescope. This device will also store the coordinates of user specified locations in the sky and communicate with a computer via a serial port.

The purpose of this device is to help people who are interested in observing objects in the nighttime sky with a telescope. The device reads the output from two optical sensors attached to the telescope. The sensors are used to measure the right ascension and declination angles of the telescope (right ascension and declination are astronomical terms to give the location of objects in the sky).

If the user locates an object that is not on the database that is supplied in memory, he/she will be able to store the location in onboard memory. The user will also be able to save these object locations to a file on a computer via the serial port. This port will also be used to upload custom star charts that the user might have, and previously saved locations. All the calculations and interfaces functions will be programmed in the C programming language.

Kraig LaFreniere, Joel Anderson, and Bijoy Anose

Advisor, Nasser Rashidi

"Water Treatment System Alarm Dialer"

The objective of this project is to construct a water treatment system alarm dialer for Total Control Systems, Inc. (TCS). Our goal is to construct a device which will monitor the status of signals generated by a Programmable Logic Controller (PLC). When an error is encountered, the dialer will notify a specified individual with a prerecorded telephone message(s). The unit will continue to notify that an error has occurred until the error is acknowledged by a keypad sequence input from a telephone. It will continue the cycle of calling the numbers individually, until the problem has been acknowledged.

The hope is to develop a system that is not only efficient, but cost effective as well. The system being developed in this project is capable of alerting a remote monitor of any problems in the control system.

Jeremy Leitzen, Ryan Przybilla and Yong Chee Wai

Advisor, Peter George

"Voice Enabled Calculator"

The goal of project is to design and develop a voice-enabled calculator. It has the ability to recognize speech input and provide audio output for normal calculator operations. The basis of the project is a simple calculator with the standard mathematical operations (add, subtract, multiply, divide, etc.). Voice recognition and voice synthesis features are added. The calculator is built using a keypad, LCD display, and an Intel microcontroller. External RAM, EPROM, and a peripheral parallel port interface are used as support circuits.

To use the calculator the first step is to train it to recognize the operator's voice. Once the calculator is trained it will be able to process verbal inputs. If the calculator doesn't recognize an input it will display an error message. This project could be beneficial for many physically disabled persons and busy executives.

K. Lewis, J. Seifert, and B. Priest

Advisor, David Bacharach

"Muscle Activity During Crunches with an Ab-Roller and the Ab-Assist"

To determine if abdominal muscles can be better isolated by using a supportive device during an abdominal crunch, electromyographic (EMG) activity of various muscles with and without an Ab-Roller and the Ab-Assist were measured. Muscle activation patterns of the m. rectus abdominis, m. latissimus dorsi and the m. obliques were recorded in 20 (M=12, F=8) volunteers. Subjects were instructed to lie supine with their knees bent such that the soles of their feet were flat against the mat and near their buttocks. Once in position, a Telemyo-8 transmitter was used to collect EMG activity. The collection sequence was synchronized to four counts, two up and two down, using a metronome cadence of 100 beats per minute. Each subject completed three abdominal crunch trials under randomized conditions: 1.) without any device, 2.) with an Ab-Roller, and 3.) with the Ab-Assist. Integrated EMG (EMG) data were normalized using the without any device condition as the standard. Using the two conditions and three muscles, a 2x3 repeated measures ANOVA was nun for EMG and RMS of each muscle. No differences were found in EMG between muscles or between the Ab-Roller or Ab-Assist. There was an interaction for RMS of muscles and conditions.

The M. rectus abdominis had a lower mean RMS recording in the Ab-Assist condition. The m. obliques and the m. latissimus dorsi responded similarly for each condition. From these results two conclusions can be made: 1.) when normalized, EMG activity is similar among abdominal muscles for the Ab-Roller and the Ab-Assist, and; 2). mean RMS of the m. rectus abdominis is lower when using the Ab-Assist compared to the Ab-Roller or even a standard crunch without any device.

Joanne Lim

Advisor, Erika Vora

"The Perpetuation of Asian American Stereotypical Depictions in Popular Culture through American Mainstream Media"

Throughout the history of popular culture, Asian Americans have rarely ever been represented, and if any representations were at all portrayed, they tended towards a distorted depiction of reality. The core of the problem was possibly a failure to distinguish between Asian and Asian American.

Historically, Asian American males have been iconized by the fictional characters of Fu Manchu and Charlie Chan. With the first wave of Asian migration came an emphasis in the mainstream media not about what may have been assimilated, but clearly what was foreign about them. Such anti-Asian sentiment was a major reason behind the exclusionary acts directed first at the Chinese and then the Japanese.

Female representation focused primarily on two typecasts: tragic victims or heartless villains. These images were a probable aftermath of popular films of the time, e.g. "The World of Suzy Wong" and "The Flower Drum Song."

The culmination of Hollywood repression of the Asian identity arguably arose with the influx of big-name actors appearing in yellowface: Asian characters played by whites in heavy make-up and poor "Oriental" accents. There were several justifications for the popularity of this phenomenon, the most common of which is the sentiment of giving the audience what they want. Another justification for this tradition was that whites made better Asians on-screen than Asians, which was probably true since the former often were actively trying to play out preformed stereotypes.

While many object to over-sensitivity on part of minorities when they cry out in protest over misrepresentation, the impact of even the most minute remark, characterization or depiction by one may be taken as a piercing stab to another who had been wronged by such oversights. The images portrayed

by popular culture has succeeded in infiltrating the very heart of our society's esteem and intellect. Such is the power of the media.

Matt Nordeen, Ooi In Keong, and Lee San Tai

Advisor, Yi Zheng

"The Virtual Digital Communication Laboratory for WWW Applications"

Analog and digital communication of signals is an important subject in EE education. However, the lack of adequate laboratory facility limits the success of students' study in this area. We have designed and developed a virtual communication laboratory that students can access through the WWW at any time from anywhere in the world. Students at a remote site can evaluate an existing communication system as well as design and test a new one using a web browser. The evaluation and test results will be immediately available to students at a remote site. Extensive graphic displays were utilized to assistant students' study. This virtual laboratory consists of a digital signal processor board and an Internet connection. The operational software for the Lab was written in C++ and the WWW application software was written in JAVA.

Shannon Ready and Jason Lahr

Advisor, David Bacharach

"Predicting Retro Running Speed from Metabolic Cost of Forward Running"

Backward walking or running otherwise known as retro walking/running is often incorporated in various sports in short spurts. More recently retro activity has been used to aid in injury rehabilitation as well as a cross training technique. In some cases, retro activity has been shown to reduce low back and knee pain. With the use of retro activity increasing, there is need for determining cardiovascular responses to retro activity at different intensities. The purpose of this study was to generate a regression equation that could estimate retro running speed from forward running speed. Subjects (N=15) completed eight 3 minute intervals of forward and backward activity on a treadmill at .88, 1.33, 1.78, and 2.23 m/s. (2, 3, 4, and 5 mph). Oxygen uptake was measured via open-circuit spirometry with Medical Graphics CPX-D. Oxygen uptake was recorded when the subject reached steady-state values. Mean oxygen uptake values ranged from 10.3 to 36.04 ml/kg/mint The linear regression equation for oxygen uptake for forward activity was $VO2 = 6.124(mph) - 4.164$, ($r = .83$, $P < .0001$) and is in

agreement with a larger data set (Pollock et al., 1978). The linear regression equation for retro activity is VO2 = 8.299(mph) - 5.609, (r =.88, P<.0001). In combining these two equations, a single equation for Retro activity speed (mph) = 0.738 (forward running speed (mph)) + 0.174 was then generated to predict a retro running speed (mph) that would elicit a metabolic demand equal to that of a given forward running speed (mph).

Michael Schmidt, Teoh Hooi Chuan, and Wong loon Tan

Advisor, Yi Zheng

"Remote Digital Signal Processor System for Distant Learning"

Digital signal processors have been widely used in computer modem, cellular phone, radar, manufacturing automation, motion control, and other applications. The digital signal processor is an important component in the EE curriculum. A remote digital signal processing system has been developed for distance learning. Students can learn the subject of digital signal processors and gain design experience by accessing the system via an Internet connection and a web browser.

The project consists of hardware and software components. A system, containing a digital signal processor, an analog-to-digital converter, and an interface to a host computer, was designed and implemented. The software in the host PC, written in C++ and JAVA, controls the functionality of the system. A remote user will be able to use a web browser such as Internet Explorer or Netscape to conduct a real time experiment using the system.

Ed Shermer and Sean Theisen

Advisor, J. Michael Heneghan

"The SIDS Monitor"

The SIDS Monitor is a device which senses when a baby's pulse stops and instantly sets off an alarm. The parents can then wake their child, preventing possible injury or even death. Most currently available "Baby Monitors" are used as sound monitors and are not dedicated for SIDS. These monitors use a microphone connected to a transmitter and a receiver connected to a speaker. This allows parents to monitor sounds such as movement, crying, coughing, and sneezing, and thus the parents may have a false sense of security if there are no sounds and may not feel the need to check on the child. The SIDS Monitor project gives a continuous status of the child's pulse rate, thus giving the parents a true sense of well-being.

This project utilizes a pulse sensor attached to an infant's body. This sensor transmits a signal to a remote location via a wireless link. Once this signal is received, it is analyzed using an Intel microcomputer. The control circuit outputs a continuously updated pulse on a Liquid Crystal Display letting parents know that either the child is fine or the child's pulse has stopped. If the pulse does stop, the LCD will then display the "no pulse" elapsed time, and an audible alarm will be set off.

Kaaren St. George

Advisor, Marya Teutsch-Dwyer

"Second Language Use in a Language Immersion Experience"

Many people have studied other languages for all sorts of reasons in a variety of settings. Each language learning experience for each individual is different. The variables that affect a language learning experience are numerous and include the learner's age, first language, motivation, language aptitude, and attitudes towards the learning environment. How each of these variables affects the language acquisition process is the subject of much debate in the field of Second Language Acquisition. Several years ago, I spent one year immersed in Spanish as an exchange student in Venezuela. Throughout the year, I kept a written journal in which I recorded my daily experiences and my thoughts about my situation and surroundings. Now, the journal provides insights into that particular language learning experience. The journal includes my attitudes towards the language and people, my motivations to learn the language, the amount of Spanish I was exposed to, and of course written evidence of the Spanish language I used in the diary itself. I calculated and graphed the amount of Spanish I used in the diary for almost half of the entries that year. With this data and the attitudes taken from the entries, a pattern of learner identity and language use emerges. My attitudes towards the language and culture of Venezuela form part of my identity at different times of the year. The amount and the types of Spanish that I used in the diary reflect my changing identity throughout the year. This information provides a longitudinal picture of what one language immersion experience is for one individual. Though everyone's experience is different, this in-depth personal study provides an interesting look at the relationship between identity and language use that can be applied to other learners in other situations.

Travis Swanson, Robert Wimmer, and David Duncan

Advisor, Bruce Ellis

"GPS Vehicle Security/Tracker"

The GPS Tracker system provides tracking of a vehicle and provides security for the people in the vehicle. GPS is an acronym for Global Positioning Systems which consist of several earth satellites that allows accurate determination of earth positions. The vehicle's location, identification number and emergency status will be transmitted from the vehicle to a remote personal computer (PC) using a radio link. The PC will show the location, vehicle ID number, and emergency status of the vehicle on a map. The vehicle unit will be interfaced to a security system and an air bag switch so that if the car security alarm goes off or the air bag is deployed, an emergency message will be transmitted to the PC. The GPS Tracker also provides a user interface to provide the driver the options to declare that he/she needs an ambulance, tow truck, or police assistance.

Keiko Ukai

Advisor, Erika Vora

"International Student Association: Theoretical Approaches towards a Successful Multicultural Organization"

Some theoretical approaches such as systems theory and postmodern perspectives are introduced in this paper as influential approaches which can be effectively applied to geocentric and multicultural organizations. My real life experiences as a member of International student association (lSA) at St. Cloud State University help me understand how these approaches work in real situations. Systems theory sees a group as a system. A system consists of many elements. The elements are interdependent to one another and make a greater whole. Therefore, the conflict we have in ISA should not be understood as a negative thing. Positive attitude towards misunderstandings and conflicts are the key for a successful multicultural organization. We inevitably have conflict because we are interdependent with one another. The greater whole made up by unique parts are certainly valuable according to systems theory. "Equifinality," one of the characteristics of systems theory suggests us to be flexible and open-minded. Although implementing system theory in actual organizations may be time consuming, system theory gives us a broader perspective about human behaviors.

Postmodern perspective is closely related to system theory. It is characterized by team-based, minimal hierarchy, global networks and project-based. Ambiguity is welcomed according to postmodern perspective because multiple interpretations are considered to be a vehicle for creative ideas and productivity.

A concept of synergy is also an important approach to a successful multicultural organization. It allows us to capitalize on diversity. It also encourages us to interact one another in an interpersonal and emotional level.

Understanding these approaches are essential for any kind of organizations in this coming century. Actually, my experiences in ISA has been meaningful and wonderful because ISA is slowly becoming one of the successful multicultural organizations which has been applying these theoretical approaches to the actual situations.

Jeffrey Vigness

Advisor, Scott L. Miller

"Events without a Cause"

This is a piece combining acoustic instruments and live performers with computer generated audio. What the two instruments, drums and any melodic instrument (in this case it is a saxophone), play is almost entirely improvised. They respond to and play around the sounds which the computer generates, and have only a very small amount of composed music. The drummer controls what the computer will play by striking a series of triggered pads which will initiate the computer's performance. Two of the pads are velocity sensitive, meaning that a different sequence will be triggered depending upon how hard the pad is struck. Most of the sequences are continual, and can be triggered on top of each other. The drummer is free to select any sequence at any time and in any order that he desires, thus providing the random elements which make each performance of this piece unique. Some of the computer generated audio is in fact random; the computer selects which pitch it will play and when it will play it, within given parameters that I pre-programmed. The performers know to a certain extent what will happen from the computer, but they do not know when or for how long. A different solo melodic instrument (trumpet, piano, clarinet, etc.) or a group of instruments may be used, but the drums must be used each time.

The computer acts as a third performer, or instrument, and it offers the possibility of timbres that have never been utilized in this setting before. By

employing them as a central musical element, we create something entirely different from conventional instruments and traditional music. The computer provides us with the opportunity not to merely electronically reproduce the sounds made by acoustic instruments, but to explore and invent new ones, and make those as musical as the conventional sounds we are accustomed to hearing.

Todd Weekley

Advisor, Brenda Wentworth

"Arashi: Storm Drums"

Taiko, Japanese drums, originated in ancient China. It was brought to Japan and began to take on a life of its own. Developing in a much different way than the mainland drums, taiko were originally used in war, religious ceremonies, and to set the boundaries for villages. As time passed, the Japanese began using taiko in festivals, and in the 1970s, the first ensemble was formed. It consisted solely of drummers.

Modern taiko, as a musical form, little resembles the taiko of centuries ago. The rhythms have become more complex, and the taiko are used in quite different ways. Even now, the "new" taiko is spreading around the world, fast becoming an international art form. As a member of this international community, I have tried to capture the mood and tone of taiko to create my own compositions, born of the drums' thunder.

My creations in a way write themselves. As I tap on my knees or on a table, new rhythms are born, or rather, find a voice to express themselves. As a composer, I try to weave these various rhythms together to create a harmonious whole. Once they have been woven together, I listen, and the song, born of individual rhythmic lines, tells me its name.

Karen Wenz

Advisor, Steve Klepetar

"The Story of Ira Hayes"

This thesis project is a creative nonfiction work which chronicles the media coverage of Ira Hayes, a Pima Indian from the Gila Rivet Reservation in Arizona Ira was serving as a marine during World War II when he and five other servicemen were photographed raising a flag on Iwo Jima. Of the six men in the photo, only three survived the battle of Iwo Jima. These three survivors were ordered back to the U.S. to participate in the Seventh War Loan drive. They were touted as heroes and wined and dined in major U.S.

cities. The pretense and hype associated with the war bond tour took its toll on the young Pima man, who felt the real heroes had died on Iwo. Even after the bond tour and the war were over, Ira was always identified as the "Iwo hero" and was pushed into public appearances. He struggled for many years with an alcohol problem and died in 1955 at age 32.

This thesis follows the media's coverage of Ira Hayes from 1945 to the present. This research is unique in that the articles were not readily available, so newspaper microfilm was searched manually to find articles about Ira's public appearances and his subsequent battle with alcohol. The annotated bibliography, which comprises the bulk of this work, contains 350400 citations and is being compiled as a database in Microsoft Access. Related articles that cover the numerous controversies over the flag raising photo, the motion picture and television productions about Ira's life and his bouts with alcohol are all included, as well as editorials, book and film reviews and numerous retrospective articles. The bibliography will be placed on a web page and made accessible to others who are interested in learning more about Ira Hayes.

Our Deep Gratitude Goes To ...

St. Cloud State University Foundation
St. Cloud State University School of Graduate Studies
St. Cloud State University Phi Kappa Phi Honor Society
St. Cloud State University Office of Sponsored Programs

Thanks Also Go To . . .

David Bacharach, Department of Health, Physical Education, Recreation and Sports Sciences, College of Education
Richard Brundage, Research Director, College of Science and Engineering
Shelley Brundage, Department of Communications Disorders, College of Fine Arts and Humanities
Sharon Cogdill, Associate Dean, College of Fine Arts and Humanities
Susan Douma, Continuing Studies
Susan Jensen-Cekalla, Grants Development and Administration, Office of Sponsored Programs
Scott Miller, Department of Music, College of Fine Arts and Humanities
Jill Minden, Assistant Vice President, Academic Affairs, Office of Sponsored Programs
Pamm Minden, Research Director, College of Education
Charles Moore, Educational Administration and Leadership, College of Education
Pat Samuel, Women's Studies, College of Social Sciences
Kay Banister Schaffer, Department of Sociology and Anthropology, College of Social Sciences
James Sherohman, Department of Sociology and Anthropology, College of Social Sciences
Leslie Valdes, Associate Dean, College of Social Sciences
Gary Whitford, Department of Social Work, College of Social Sciences
Yi Zheng, Department of Engineering, College of Science and Engineering
Jiping Zuo, Department of Sociology and Anthropology, College of Social Sciences