

1997

# Celebration 1997 Abstract Booklet and Student Presentation Schedule

Xavier University - Cincinnati

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# **CELEBRATION OF STUDENT RESEARCH**



**1996/97**

**XAVIER UNIVERSITY  
Cincinnati, Ohio**

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**XAVIER UNIVERSITY  
Cincinnati, Ohio**

**XAVIER UNIVERSITY**  
**Cincinnati, Ohio**

Fr. James Hoff, President

Dr. James Bundschuh  
Vice President Academic Affairs

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Dear Reader:

Xavier is committed to sustaining an outstanding learning environment. When students collaborate with faculty on research projects there is a high level of intellectual excitement that grows from a pursuit of truth and new knowledge. This activity constitutes learning at its highest level.

The abstracts contained in this volume summarize the results of collaborative research of seventy-six Xavier students with their faculty advisors. I congratulate these students and faculty for their fine work and for the inspiration they provide to the entire University community.

Sincerely,

A handwritten signature in dark ink, appearing to read "James E. Bundschuh", written over a horizontal line.

James E. Bundschuh  
Academic Vice President

JEB/nkc

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**BUSINESS**

## **Child Care Issues in Over-the-Rhine.**

Child care is currently a hot topic because of the welfare reform that will take away the payments to non-working welfare mothers. The biggest concern is what will happen to the children of those welfare families when the mothers go to work.

I will be addressing different issues that affect child care such as welfare reform, teen mothers, violence and crime, and community social organizations. I will also be studying the overwhelming poverty of the area and how it affects the quality of available child care. Included will be data such as the different costs of available child care compared to the average income of an Over-the-Rhine mother and the results from surveying those mothers and children.

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## **Educational Impact on Inner-City Economies.**

The main topic of discussion of this paper is the role of education in the inner city. I would like to look at problems with the educational process, as far as, the development of inner city youths. Another main issue that I would like to discuss is the impact that education has on the economy. It is my understanding that the more educated society is, the better off it will be economically. I have attached a list of sources that I have already found to develop my research, and I am hoping to interview two people for more information. One of these people is Mr. Tom Conlan, president of the Student Loan Funding Corporation. The other is an elementary teacher, Kristen Frank, who has some experience in teaching inner city youths.

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Resource

## **The Effects of Threat on Managerial Decision Making Concerning the Remediation of Company Violations of Environmental Standards.**

**Objective:** The objective of this study is to determine the relative persuasiveness of threats and value appeals in business memos describing environmental hazards. This study follows up prior research that showed that a combination of threats and value appeals proved to be more persuasive in these situations than the use of value appeals alone.

**Method:** Business executives in the Cincinnati area evaluated a set of four memos, including three dummy memos and a fourth experimental memo. One set included an environmental memo using threat alone and the other set an environmental memo using value appeals alone.

**Outcome:** Results indicate that threat alone is significantly more persuasive than using value appeals in environmental remediation memos.

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# **HUMANITIES**

## **Aspasia of Miletus: Historical or Fictional Character?**

I will be presenting the paper I am writing for my Capstone Course. This paper will survey the ancient sources that make mention of Aspasia, the influential companion of Pericles. I will then explore modern non-fiction uses of the character of Aspasia and their historical accuracy, relying heavily on Madeline Henry's recent work, *Prisoner of History: The Biographical Tradition of Aspasia of Miletus*. I also will examine fictional representations of Aspasia, specifically Hamerling's 19th century novel in two volumes entitled *Aspasia: A Romance in Ancient Hellas*.

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## **The Demand for Equality in the Works of Rosario Ferre.**

Latin American women have struggled for social equality for years. Rosario Ferre presents her work to describe the marginality women have faced within the boundaries of society. As in *La Muneca Menor*, an examination of social prejudices and the trials of women in a patriarchal society show that the focus of Ferre's writing is to demand social change. Further, Ferre shows intense emotion about the status issue of Puerto Rico in *Maldito Amor*. Although her writing often concludes with disastrous results when the oppressed demand changes, it is proposed that her "fantastic" (non-realistic) conclusions necessitate renovation within Latin American society.

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## **Franz Schubert: The Poetic Composer.**

*"He invested poetry with music and music with speech."*

Franz Grillparzer

Franz Schubert was born in 1797 in Vienna, Austria. During this time, the Austrian people suffered under severe economic and physical hardships due to the "Napoleonic Wars," as well as oppression by their own government. Such negative influences, however, could not stifle the musical genius of Franz Schubert. Throughout this year, the 200 year anniversary of his birth, Franz Schubert is being honored as one of the most prolific of all composers and the one who could invest "poetry with music and music with speech," as exemplified in his song cycle, "Die Winterreise."

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## **The Impact of the Earth.**

The basis of my thesis lies in the contextual research into the lifestyles of the ancient Anasazi women and in the exploration of what it means to be a women and how she expresses her nature. The Anasazi potters, basket weavers and farmers discovered and developed intense connections with mother earth. This relationship, I believe, still holds true today, especially in the souls of contemporary women artists. Directing my attention on these two cultures allows me to explore the everyday lives of women, both past and present, as well as the spirituality and intuitive nature of their roles in society.

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## **The Issue of Identity in Puerto Rico: Internal Strife in the Search for Status.**

The number of Latin American people in the United States has grown to over 30 million people in the past decade. Therefore, the problems in these people's native countries have direct effects on us also. This can be clearly seen with Puerto Rico. The present research was designed to examine the issue of status in Puerto Rico; statehood and 'enhanced' commonwealth status are most popular, and are examined in depth. It is proposed that enhanced common-wealth status would best benefit the island, and further, that the majority of the Puerto Ricans will vote in favor of the same.

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## **Nietzsche and Heraclitus: The Birth of Tragedy.**

In several of his works, Friedrich Nietzsche identified philosophic and personal similarities between himself and Heraclitus of Ephesus, the Presocratic. Nietzsche's comparisons can be clarified in an examination involving, on the one hand, commentary of the extant fragments concerning Heraclitus, and, on the other hand, Nietzsche's commentary on Heraclitus contained in *Philosophy in the tragic Age of the Greeks*. Such an examination will clarify the philosophy of Nietzsche through his interpretation of Heraclitus.

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## **Notable Aspects of Thucydides' Account of the Athenian Plague of 430 B.C.**

During the Spartan invasion of Attica of 430, an especially virulent and as yet unidentified plague broke out within the Athenian city walls which killed 26% of the population and severely demoralized those who survived. The aspects and effects of this plague are recounted by Thucydides, having himself contracted and lived through it. From his short account, however, much can be determined regarding not only the possible identity of the plague, but also (by contrast with the Hippocratic *corpus*) the prevalent medical beliefs and practices among the laity in Greece. Specifically, in contrast to established Hippocratic medical doctrines, it can be seen that the majority of Greeks knew of the processes of contagion ("germ theory") and acquired immunity.

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## **The Role of Women in the Literature of Federico Garcia Lorca.**

In this project I have chosen to examine the literary period of 1898-1936, and the work of the well known Spanish poet and playwright, Federico Garcia Lorca. In my investigation I will be examining the role of women in the trilogy of plays dealing with simple country life, *Bodas de Sangre* (Blood Wedding), *Yerma* (Yerma), and *La Casa de Bernalda Alba* (The House of Bernalda Alba.)

Garcia Lorca is not only a playwright, but a critic and victim of society, who incorporates the literary movement of realism in his plays. He returns to the portrayal of life as it is and conjures moods, feelings, and impressions from observation. He is above all considered a magician with words and a poet of fantasy who can provoke not only images, but inspiring sensations from the observation of details coming from colors, sound, rain, light, and lyrical dialogue. His commentary on life not only led him to produce such masterpieces as the trilogy I am analyzing, but also led to the tragic ending of his own life. Throughout the dramas are the recurring themes of life, death, and love. These three themes are incorporated into the lives of many characters and therefore create a strong central personality type of the role of women. This is Lorca's expression and social criticism of Spain in the early 1930's that has developed into one of the most valued contributions to Spanish literature.

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## **Sixty Years Later and Still as Mean; Journalists' Ethics in the Movies.**

This research project will focus on journalists as portrayed in the movies and whether their ethics have changed over most of the past century. The primary comparison will be through an examination of the 1931 film *The Front Page* and the 1994 film *The Paper*. The research will be conducted to discover what type of ethics journalists are portrayed to have in the movies, and to see if this portrayal has remained constant from older movies to present day. Our analysis will be done against the standards of truthfulness and professionalism presented by Sissela Bok in Lying: a moral choice in public and private life, and Michael Bayles in Professional ethics. The research for this project will also include viewing other movies, such as *His Girl Friday*, *All the President's Men*, and *Citizen Kane*.

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**SCIENCE**



### **Analysis of Cell Cycle Suppressors on *Aspergillus*.**

This study focused on the regulatory pathways that control the cell cycle, especially with regard to mitosis. It is hoped that this knowledge can be applied to better understand the development of cancer cells. The cell cycle is conserved throughout evolution, therefore *Aspergillus nidulans* was chosen for this study. Two aspects of previously generated extragenic suppressors were investigated. The suppressors for *nimT23*, located on chromosome VI, are distinct from another cell cycle gene, *bimE*. It was also found that extragenic suppressors *ENM1*, *ENM2*, *ENM26*, and *ND1* were recessive, and *ENM13* was dominant in respect to the wild type.

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## **Analysis of Over-the-Counter Pharmaceutical Products.**

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## **Automobile Heat and Air Conditioning Mold Comparison.**

A comparison was done between molds and fungi, collected from a car heater and a car air conditioner. It was hypothesized that the air conditioner will generate more molds than the heater. In a 1988 Audi '80 saboraud agar plates were exposed to both the heater and the air conditioner under equivalent conditions. CFUs were identified. It is concluded that more CFUs were collected on the plates exposed to the heater than the air conditioner. Types of molds were generally similar in both. The data, however, show the opposite of the hypothesis. Many more molds such as penicillium and rhizopus were found on the heater plates. The conclusion is that the dryness of the heat allows a much better dispersion of the mold spores.

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## **The Avoidance of Mate Choice Copying Behavior by Male Western Mosquitofish, *Gambusia Affinis*.**

Female animals of several species (e.g. fallow deer, black grouse, and guppy) have been documented to copy the mate choice of other females. There are several possible adaptive explanations for this behavior. By minimizing the time they are in close association with displaying males, females may be minimizing their own risk of predation. A second hypothesis proposes that young females may benefit by copying the mate choice of older, more experienced females. Male animals would not be predicted to copy the mate choice of other males because of the effects of sperm competition. We examined the role that copying behavior plays in male mate choice in the western mosquitofish, *Gambusia affinis*. Male mosquitofish were allowed to observe two females for a period of 24 hours. One of those females was seen mating with another male and the other female did not mate. We then observed the mate choice behavior of the males. The males did not spend significantly more time in association with the female that they had not observed mating. However, when we conducted a second experiment in which we controlled for the confounding effect of group size, the males did appear to avoid copying the mate choice of other males.

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## **The Bubble Nest as an Indicator of Male Quality in the Siamese Fighting Fish, *Betta Splendens*.**

Intraspecific animal competition in nature usually involves ritualized interactions and rarely escalates into injurious combat. During these ritualized interactions, animals assess the competitive ability and motivation of their opponents. Based upon this assessment, a decision is made whether to escalate or abandon the competition. One means by which animals determine the competitive motivation of their opponent is by assessing the relative value of the resource being contested. Using artificial bubble nests, we are examining the role that territorial bubble nests play in the assessment of rivals in the male Siamese Fighting Fish. Using a game theory approach, we predict that in this asymmetric war of attrition, the bubble nest is an indicator of territory value, and a male without a nest will be less willing to persist in an aggressive encounter with a rival possessing a nest. Preliminary results indicate that male Siamese Fighting Fish do use the presence of a territorial bubble nest in their assessment of the resource holding potential of a rival, and are less willing to engage in escalated contests with a territorial rival. Fertilized eggs are placed in the bubble nest, and this species exhibits paternal care only. We predict that if female Siamese Fighting Fish use the presence of a bubble nest as an indicator of male quality, they should be more attracted to a male with a bubble nest when given a choice between males. Female Siamese Fighting Fish do exhibit a significant preference for males with an artificial bubble nest in their tank.

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## **A Comparative Study on the Concentrations of Fungi in Several Living Environments and a Correlation With Allergenic Effects.**

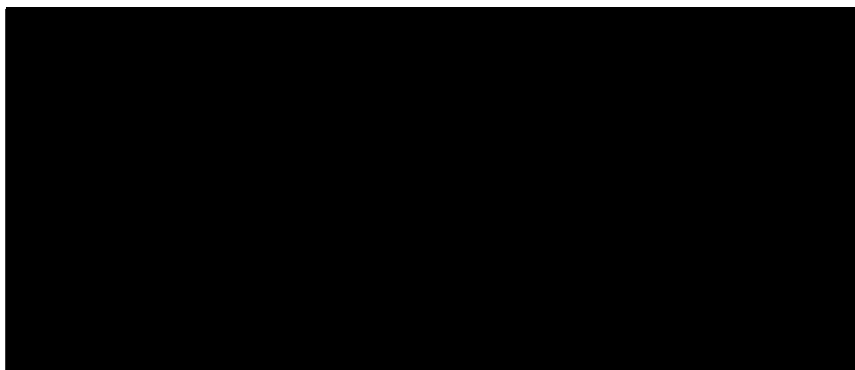
This study was undertaken in order to compare genus and the relative frequencies of airborne microbes, i.e. molds and fungi within indoor residential environments and also to determine whether these findings could be correlated with allergenic effects. Three houses were the focus of this study. Within each of the three residential settings, four rooms, the bedroom, bathroom, kitchen and hallway (neutral area), were analyzed. Across all three houses, *Penicillium* was among the predominant groups present (PGP). *Aspergillus*, *Fusarium*, and various yeasts were among the other allergenic fungi founds. The result of House three (H3) is quite significant in that the individual living in this house exhibits a moderate case of the skin disease, eczema. However, the frequency of House two (H2) was significantly less than that of H3. This finding is notable in that the individual living in H2 suffers from respiratory disease. The frequency of House one (H1) falls between that of H2 and H3. It is therefore concluded that the frequency is not so much the determining factor as is the species of molds present. However, certain factors must be taken into consideration, such as, the larger the frequency, the higher the probability that allergenic molds will be present. Also, individuals may have a predisposition to certain allergenic molds, affecting one person and not another.

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## **The Determination of Iodine Concentration Using an Iodide Specific Electrode.**



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## **Does Arrowroot Cause an Increase in Twinning?**

Arrowroot, *Maranta arundinacia*, is an edible starch obtained from the rhizomes of certain tropical herbs grown in the West Indies. It has been suggested that arrowroot causes an increase in twinning, although until now, no formal research has been done to try to see if this is true. It is the goal of this experiment to find a correlation between having arrowroot in the body at the time of ovulation and an increase in monozygotic or dizygotic twins. To do this immature female mice are injected with follicle stimulation hormone and luteinizing hormone to simulate normal ovulation. At the same time, a 2% solution of arrowroot is injected. Following this, the ovulated eggs are harvested and counted to see if there could be an increase in dizygotic twins, and the zona pelucidas are measured to see if there could be an increase in monozygotic twins. The results of these tests will soon follow.

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## **Development of a Mouse Model of Pulmonary Pseudomonas aeruginosa Infection.**

The purpose of this experiment was to develop a model in order to infect a series of mice by intratracheal injections of different dosages of the bacteria Pseudomonas aeruginos. After infection the mice were given time periods up to several days, sacrificed, and analyzed for bacterial colonies in the lungs and histological observations of the tissue. Our results show that when given a larger dosage of the bacteria the mice remained infected up to eleven days post-inoculation. However, smaller dosages of the bacteria led to earlier onset of illness and subsequent death. This experiment was designed to study the effects of Pseudomonas aeruginosa and develop drug treatment for patients stricken with Cystic Fibrosis.

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## **Effect of Decreased Oxygen Levels on Bradykinin-Induced Relaxation in Bovine Coronary Arteries.**

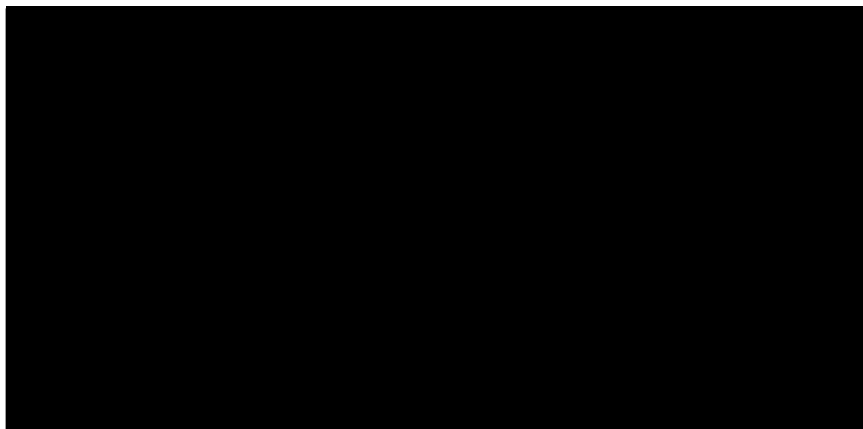
The purpose of this study was first to determine if bradykinin receptors are present in bovine coronary arteries and then to examine the effect of decreased oxygen levels on the bradykinin response. The study was conducted using isolated arterial rings with and without an intact endothelium. Changes in arterial force levels demonstrated the presence of bradykinin receptors. A bradykinin-induced relaxation was only observed when the endothelium was intact. Decreasing oxygen levels reduced the bradykinin-induced relaxation. We conclude that bradykinin receptors are present in the endothelium of bovine coronary arteries and the response to bradykinin is sensitive to changes in oxygen levels.

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## **The Effect of Mercury and Mercury Compounds upon Malate Dehydrogenase**



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## **The Effect of Urbanization on Stream Macroinvertebrates.**

Urban-related habitat and water quality alterations have occurred in the Mill Creek watershed of Hamilton County, Ohio. Channelization for flood control has destroyed natural stream channels and bordering streamside vegetation. Overflowing sewage, industrial effluent, and urban runoff have polluted the streamwaters. Both separately and together, channelization and water pollution have decreased the diversity of stream macroinvertebrates in the downstream, urbanized areas of the Mill Creek basin.

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## **Female Mate Choice Copying Behavior in the Western Mosquitofish, *Gambusia Affinis*.**

Female animals of several species (e.g. fallow deer, black grouse, and guppy) have been documented to copy the mate choice of other females. There are several possible adaptive explanations for this behavior. By minimizing the time they are in close association with displaying males, females may be minimizing their own risk of predation. A second hypothesis proposes that young females may benefit by copying the mate choice of older, more experienced females. We examined the role that copying behavior plays in female mate choice in the western mosquitofish, *Gambusia affinis*. Female mosquitofish were allowed to observe two males for a period of 24 hours. One of those males was seen mating with another female and the other male did not mate. We then observed the mate choice behavior of the females. The females spent significantly more time in association with the male that they had observed mating. However, when we conducted a second experiment in which we controlled for the confounding effect of group size, the females did not appear to copy the mate choice of other females.

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## **Fungus and the Neutropenic Patient.**

Fungus is a prevalent enemy to the neutropenic patient. Without a sufficient immune system, such a patient can become invaded by even common fungus that normally would be deterred by the body's defenses. In this experiment, the airborne fungus in Strict Handwashing Rooms for neutropenic patients were compared to fungus located in Non-Isolate Rooms to see if the neutropenic precautions were actually effecting mold counts. Fifty Sabouraud agar plates were placed in various rooms designated "Strict Handwashing," as well as 50 plates in "Non-Isolate" rooms. They were left in similar locations for 45 minutes. Once incubated for one week, molds were counted and identified. It was discovered that the Strict Handwashing precautions designed to reduce fungus counts were in fact ineffective, yielding the same types and numbers of molds as the "Non-Isolate" rooms.

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## **The Genetic Population Structure of the Urban Stray Dog.**

The main purpose of this research study is to determine if the mixed-breed population of dogs in the urban area of Southwest Ohio/Northern Kentucky is homogeneous (i.e. one contiguous population) or heterogeneous (i.e. several subdivided populations). The secondary purpose of this study is to determine the extent of correlation between some phenotypic traits of coat color in these populations.

The dogs studied were from the stray populations in the area animal shelters as a representative sample of the total mixed-breed dogs of that area. The method devised for sampling was to count the phenotypic traits of coat color observed in each dog sampled. Chi-Squared ( $X^2$ ) analyses were applied to this data in order to reject or fail to reject the null hypothesis of homogeneity and to test for gene frequency correlations.

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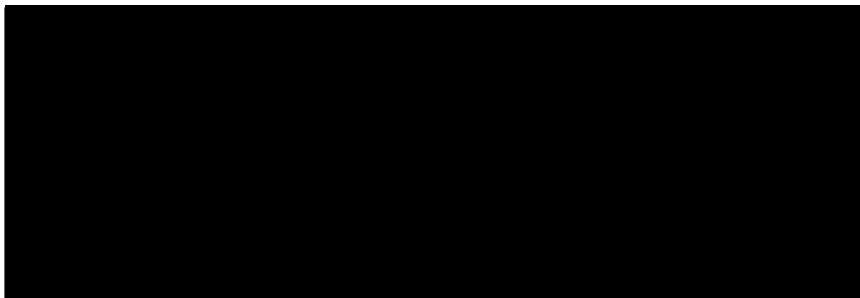
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**The Impact of Environmental and Technical Factors on  
Indoor Radon Concentration in Residential Buildings.**



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## **Nature of Quantum Mechanical Systems.**

Quantum Mechanics is the mathematical formalism developed to explain the statistical nature of the atomic world. Visualization of these concepts is generally difficult because of the size of the systems. A computer program can aid in understanding ideas presented in these upper level courses. Development of exercises accompanying the computer program, Graphical Schrodinger's Equation, increase the student's out of class resources. Particles of different masses are studied in systems of varying parameters. The exercises include: Free Particles, Wave Packets with Barriers, Barrier Potentials, Infinite Square Wells, Harmonic Oscillator Potentials, and the Hydrogen Atom.

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## **A Population Genetics Study of the Coat Colors of the Stray Dog Population.**

The dog has evolved along side the human being for almost the entire existence of our species. Humans have bred dogs with certain characteristics and traits in order to use them for a certain job, or more recently (evolutionarily speaking) in order to have a nice looking dog for "show." However, free ranging dogs have also developed mixing up their genetic pool by centuries of panmixis. These mixed bred populations have been stuck in shelters and disregarded. Amazingly the genetics of the coat colors of these dogs have never been investigated, and described on a genetic basis. We sampled these dogs at various pounds in Ohio, Indiana, and Kentucky, statistically analyzed the data, and concluded whether the mixed breed population was homogeneous (meaning it is one giant population) or heterogeneous (meaning it is many populations separated by barriers). Our hypothesis was that the dog population in this region is a homogeneous one. We also intended to determine the gene frequencies of the coat color alleles, and determine any correlations between different alleles. By doing this we hope to provide an understanding into the genetics of mixed breed dog coat colors.

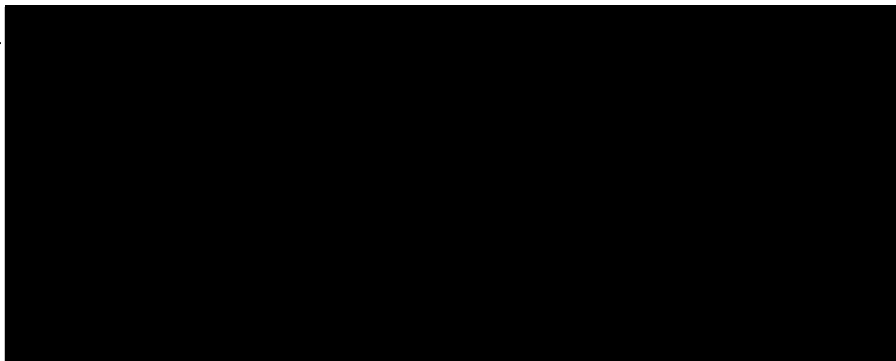
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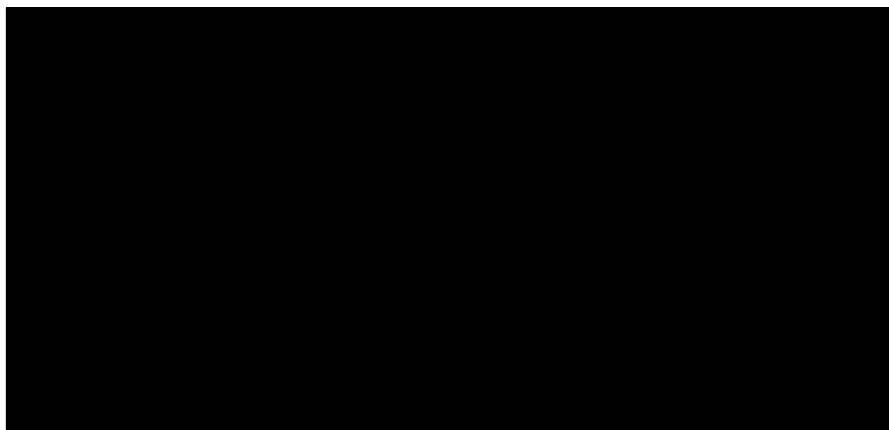
## **The Reactivity of Small Metalloborane Clusters.**



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**Resolution of a Racemic Mixture of the  
Pharmaceutical Products Naproxen and Ketoprofen.**



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## **The Role of Sperm Depletion in the Evolution of Male Mate Choice in the Western Mosquitofish, *Gambusia Affinis*.**

Traditional sexual selection theory holds that while it is adaptive for female animals to exhibit active mate choice, males should be relatively indiscriminate in their choice of mates. This is believed to be the case because female investment in reproductive effort is typically much greater than male investment, and because sperm are so cheaply produced, male animals should be selected to mate with any available female. Male mosquitofish contribute only their gametes to the reproductive effort and according to traditional sexual selection theory they should not discriminate between potential mates. However, male mosquitofish have been shown to exhibit active mate choice and allocate courtship time relative to females' fecundity and fertility. Because female mosquitofish store sperm and are usually multiply mated, sperm depletion and sperm competition may be the selective pressures that led to the evolution of male mate choice in this species. We will be examining sperm depletion in male mosquitofish by presenting males with series of virgin females. If sperm depletion occurs in this species, the later mated females would be predicted to produce fewer offspring. An alternative explanation for a decrease in offspring produced by later females would be a decrease in male libido. To test this second possibility we are monitoring the sexual behavior of male mosquitofish sequentially exposed to ten females over the course of a ten hour period.

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## **Sonoluminescence.**

Sonoluminescence is the process of changing sound energy into light. Under proper conditions a gas bubble in a liquid may be trapped by a sound field and driven so that it produces light. The mechanism by which this process takes place is largely unknown and has become an important problem in contemporary physical acoustics research. These amazing picosecond pulses of light emitted by the vapor inside the bubble indicate a plasma temperature of over 100,000 degrees Centigrade.

We have constructed the apparatus and have successfully attained sonoluminescence. We are now using a photometer system to study the effects of liquid concentrations and experimental parameters on the intensity of the emitted light. Results of this research will be shown.

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## **A Survey of Airborne Allergenic Fungi in a Grocery Store.**

This experiment was undertaken following the discovery that several employees at a local grocery store were experiencing allergy symptoms while inside the store but not outside of work. Large numbers of studies have been performed on "sick" buildings where allergic reactions such as this occurred as the result of fungi. This concept was used for a study of this grocery store. It was hypothesized that the inside air contained more allergenic types of fungi not present in outside air. Data shows that fungi inside the store are generally the same as those found in outside air, with several notable exceptions. There were increased amounts of allergenic fungi found indoors.

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## **Survey on Food-Borne Fungi: Isolation and Identification of Fungi in Selected Foods.**

Mold contamination of foods occurs during the pre-harvest and/or the post-harvest periods. During these periods, temperature plays an important role in the growth, morphogenesis, quality, and nature of the metabolites of fungi. Humidity influences the growth of mycelia, the production of fruiting bodies, and the spore germination of mold.

Thirty-three samples were obtained from two different commercial coolers in a meat store. Sabouraud media was used for the isolation, identification and maintenance of the fungi. Viable counts were performed on each plate. CFU's were counted after incubation for 7 days at room temperature 25°C. Taxonomical identification was based on the morphological characteristics of fungi.

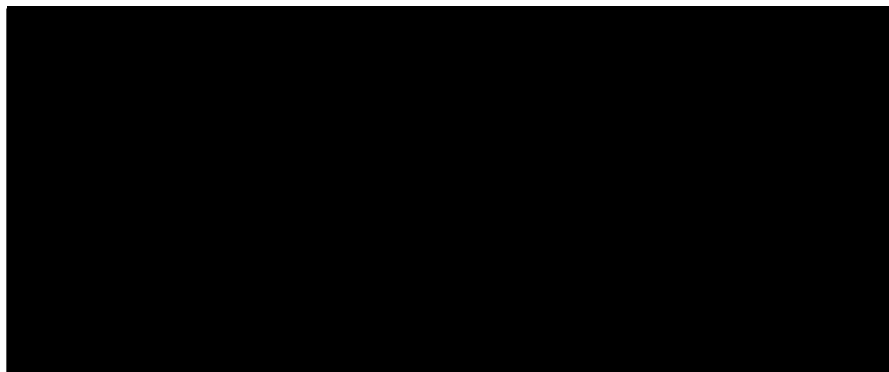
Fewer CFU's were collected in the walk-in than in the sliding door cooler. In both cases the fungi were comparable in type but fewer in number compared to store's air in general.

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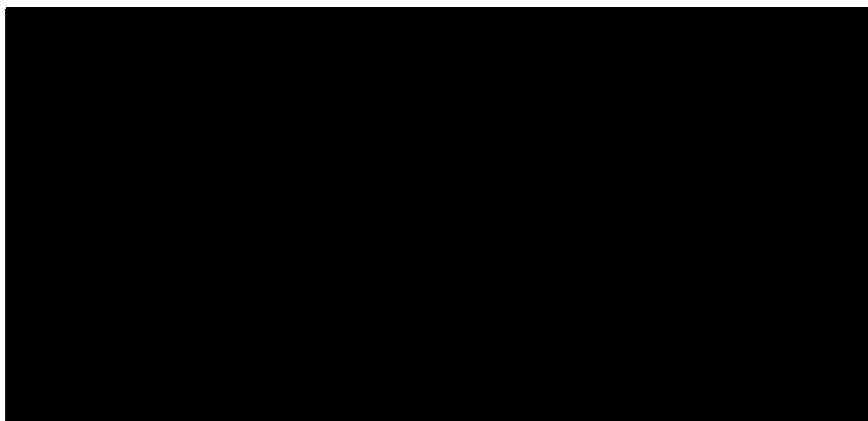
## **Synthesis of Mercury Etheno ATP.**



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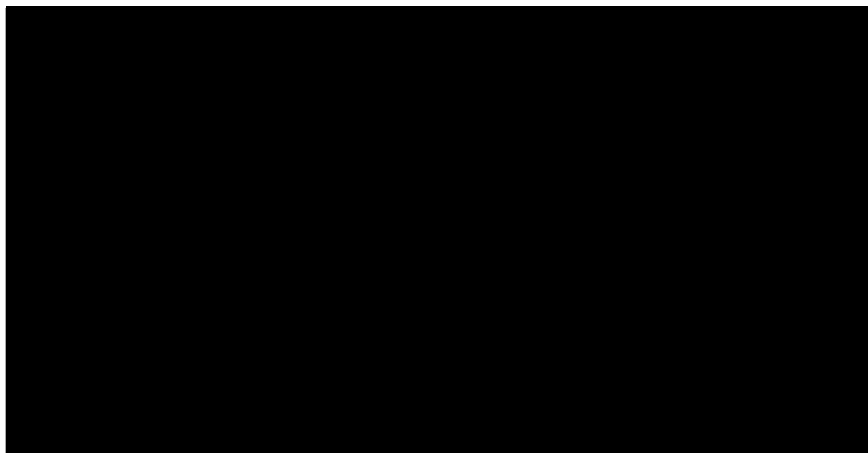
## Synthesis of Metal Carboxylates.



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## Synthesis Study of Superconducting $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}$ .



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# **SOCIAL SCIENCE**

## **Adolescent Development: From Idealism to Pragmatism.**

Piaget (1972) found that as adolescents enter the formal operational stage of cognitive development, they form idealistic views on how to solve many problems in society. It was hypothesized that as adolescents increased in age and experience, their idealistic attitudes would decrease. A survey was constructed in order to measure the level of idealistic attitudes possessed by the participants. Participants were recruited from a junior high school, high school, and university. Older college students were less idealistic than younger college students and high school students. It was found that experience plays an important role in the decrease of idealism.

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## **Competency Ratings of Interviewers are Affected by Their Sex and Attire.**

Past research indicates that both gender and attire have main effects on the perceived competency of interviewers, but how this effect manifests itself remains unclear. This study examines the interaction between gender and attire on perceived competence using graduate students as interviewers and undergraduates as interviewees. We hypothesized that females would have to be professionally dressed to achieve equal competency ratings as males. Our results indicate otherwise; a three-way interaction was found between type of dress, and sex of the interviewer, and sex of the interviewee ( $F(1,46)=5.27, p=.026$ ); further analysis of the means is being processed to determine exactly where the significance of the interaction lies.

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## **The Effects of Age on Crowd Estimation.**

The present study examined age differences in numerosity judgments. Numerosity refers to the ability to judge correctly the number of items in a situation. Sixty volunteers (30 college students and 30 elderly adults) participated in the study. Participants viewed photographs taken from the front and rear of a classroom and then estimated the number of students in each photograph. Results show that older adults made more errors than college students in numerosity judgments. Furthermore, both age groups overestimated the size of the crowd in the rear-view photographs.

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## **Effects of Employment on College Students' Academic Performance and School Involvement.**

Researchers disagree about whether part-time employment promotes or hinders college success. Questionnaire data from 99 Xavier University undergraduate students were used to investigate the relationship among students' employment status, academic performance, and school involvement. A self-report questionnaire was given focusing on four measures: GPA, frequency of unexcused class absences, and average time spent on homework and school activities. Based upon previous research, it was hypothesized that academic performance and school involvement are negatively correlated with gainful employment. A correlation coefficient indicated no relationship between academic performance and college employment; however, participation in school activities was related to hours employed per week.

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## **The Effect of Incentive on Performance.**

The effect of incentives on the performance of individuals was explored. A group of 34 students was divided into two groups. Some individuals received an incentive for their performance on a sentence creation task, and other individuals did not receive an incentive. Individuals performed similarly regardless of whether or not an incentive was given. Implications of incentives on performance will be discussed. We are also currently researching the effects of incentives on performance of groups versus individuals.

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## **The Relationship Among Eating Attitudes, Loneliness, and Self-Monitoring Among College Students.**

Relationships among eating attitudes, loneliness, and self-monitoring in male and female college students were explored. The surveys used included the EAT-26 (Garner & Garfinkel, 1979), the UCLA Loneliness Scale (Russell, Peplau, & Ferguson, 1977), and the Snyder's Revised Self-Monitoring Scale (Lennox & Wolfe, 1983). Significant relationships were found between: (a) four factors of the EAT-26 Scale (dieting attitude, awareness of food content, food preoccupation, and total score); (b) between dieting attitude and sensitivity to others; (c) between EAT total score and ability to modify behavior; and (d) food preoccupation and loneliness. Strong relationships were found between eating attitudes and self-monitoring, yet, a very strong relationship did not exist between eating attitudes and loneliness.

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## **Relationship Analysis Between Self-Esteem and Extraversion.**

Past research has indicated that self-esteem and extraversion were positively correlated with other variables such as shyness, anxiety, loneliness, social participation, self-monitoring, coping, and baldness. The present study examined self-esteem and extraversion to examine the possibility that extroverts have higher self-esteem than introverts. Thirty-seven undergraduate students participated in the study by completing the Coopersmith's Self Esteem Inventory and the Keirsey Temperament Sorter. A correlation coefficient was computed and failed to indicate a significant correlation between the variables. It might be that the study had too few participants to have the power to demonstrate an effect.

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