

The Sigma Zetan

Volume LXIX

2003

**Proceedings of the National Convention
Our Lady of the Lake University
San Antonio, TX
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The Sigma Zetan

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Volume LXIX

Robert J. Moffitt, National Editor
Malone College, Canton, Ohio

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Abstracts of Student Papers

Relationship between Oxidative Stress Resistance and Longevity in *Drosophila melanogaster*

Melissa Adams

McKendree College

Longevity has been a topic of interest in the scientific community for many years. The idea that ageing is the result of oxidative stress was introduced as the free radical theory. It states that ageing results from the accumulation of free radicals, which lead to oxidative damage within the cells and tissues. This study addressed the possibility of a correlation between oxidative stress resistance and longevity. Stocks of various *Drosophila melanogaster* mutants were tested using paraquat to induce oxidative stress. The results were analyzed by comparing maximum lifespan (in days) and oxidative stress resistance (% alive/100 flies for a 48-hour period). Preliminary data showed that only bang-sensitive (Bas), bang-senseless (Bss) double mutants demonstrated the proposed correlation. When compared to CS, Bas;Bss exhibited a relatively short lifespan and high degree of paraquat sensitivity. Because this relationship was not apparent in the other mutants tested, it may be deduced that oxidative stress is not the primary component of ageing and other mechanisms may function to an even greater extent as the causative agent(s).

GABA-Dopamine Interaction in Alcohol-Motivated Behaviors

Sandra R. Alcalá

Our Lady of the Lake University

The purpose of the present study is to investigate a potential interaction between GABA and dopamine (DA) in the bed nucleus of the stria terminalis (BST) and the ventral tegmental area (VTA) in regulating the reinforcing properties of alcohol. Previous research has shown that a reciprocal DA projection exists between the BST and VTA. In addition, research has also shown that GABA projects from the VTA to the BST. Thus, given the above research, we propose to study the potential roles of GABA and DA in EtOH-reinforced behaviors. To accomplish this, we propose to use a nonspecific GABA antagonist, the D1 receptor antagonist, SCH23390, and the D2 antagonist, eticlopride, in assessing their actions on alcohol-reinforced behaviors. Alcohol preferring (P) rats will be trained on an FR4 schedule to lever press for 10% alcohol. Following stabilization, the animals will be implanted with a cannulae in the VTA and a second cannulae will be placed in the BST. First, a reinforcer



control group will determine the pharmacological specificity of our test agents by training rats to lever press for 3% sucrose. Second, a neuroanatomical control will determine if the GABA-DA interaction, in relation to EtOH seeking behaviors, is specific to the BST and VTA. We hypothesize, based on previous research in our lab, that GABA in the BST will regulate DA in the VTA, through the D1 receptor mechanism, to control alcohol responding. We further hypothesize that these effects will be specific to EtOH, but not sucrose. Finally, we hypothesize that these effects will be seen between the BST and VTA, but not the nucleus accumbens (NAcc) and VTA.

Analyzing Ice Cores and Snow Pits in the Lake Placid, NY Region: A Nasa Student Research Opportunity

Sara E. Brown

Messiah College

Snowfall history and climatic data is readily recorded in snow pack and lake ice. The goal of this research opportunity is to determine the climatic history in the Lake Placid region of New York from November 2002 to February 2003 through snow pit, ice core and water quality analysis. Snow pit analysis techniques gather data of snowfall records and weather conditions. Water equivalency, measured in density per set volume, indicates snow moisture content. Ice augers provide access to lake water to assess water quality with Vernier Probreware. Ice cores of three lakes provide ice profile information. Polarization analysis of ice thin sections identifies ice types and formation conditions. Data is represented using data tables and analyzed using EXCEL graphing capabilities. It is determined that ice and snow conditions impact local and global ecosystems as well as human activity. The purpose of this NASA study, under the direction of Dr. Peter Wasilewski and Dr. Anthony Gow, is to analyze the ice and make recommendations to the Olympic Regional Development Committee planning the venues to help decide if natural ice or manmade ice should be used in the next Winter Olympics held at Lake Placid.

The Relative Stability of Three Regions of Topoisomerase II mRNA from K562 and K/VP.5 Human Leukemia Cells

Rachel Buhrt

University of Indianapolis



The levels of some mRNAs in cells are regulated by the rate of degradation. In general, mRNAs that are needed to synthesize a protein are degraded more slowly than mRNAs whose protein products are no longer needed. mRNA may be degraded progressively from the 3'-end, progressively from the 5'-end or randomly degraded. To determine the most likely mechanism for topoisomerase II mRNA degradation, semi-quantitative procedures for measuring mRNA concentration [reverse

(RT) and polymerase chain reaction (PCR)] were executed. The objective was to determine indirectly the relative concentration of 3'-ends, 5'-ends, and a selected middle region of topo II mRNA for K562 and K/VP.5 cells. The results of this study suggest that the 3'-end topo II mRNA of K/VP.5 cells is present in a lesser concentration than for the 3'-end topo II mRNA of the K562 cells (n=6 determinants). As for the 5'-ends the concentrations are comparable for both K562 and K/VP.5 topo II mRNA (n=3 determinants). The concentration for the middle region of topo II mRNA (nucleotides 2250-2541) appears to be less for K/VP.5 mRNA than for K562 mRNA (n=3 determinants). Collectively the results obtained in this and previous studies (Sergeketer 2002, Miller 2001) support a model for progressive degradation of topo II mRNA from the 3'-end toward the 5'-end.

Investigating Graphs of Algebraic Functions and/or Equations

Marlene Cano

Our Lady of the Lake University

Graphing is an important part of algebra and pre-calculus classes and it is also an area of mathematics that students have trouble grasping. As the level of mathematics increases, the assumption is made that students can clearly depict a graph of any function and/or equation within seconds from the time presented to them. Sometimes, this is not the case. Only the most important points such as the vertex, the center, and the intercepts are emphasized in most mathematics textbooks. However, this information does not allow for a very accurate graph. Research was done to relate simpler areas, or concepts, of mathematics, such as symmetry, substitution, trigonometric identities, and the Pythagorean triples of trigonometry to the graphs of functions and/or equations of parabolas, cubics, ellipses, and hyperbolas. Through the research, many interesting and easy points, for a better understanding of the relationship between the equations and/or functions and their graphs and for better accuracy in the shape of the graphs, were found.



The Effects of a Conservation Area on Fish Assemblages and Stream Habitat

Erin Crow

Millikin University



Two streams in Macon County, Illinois, Friends Creek and Friends Creek Ditch, flow through and combine in Friends Creek Conservation Area, continuing to a confluence with the Sangamon River. We surveyed fish assemblages and stream habitat in five sites above, on, and below the conservation area

during the summer and fall of 2001. Species diversities, ranging from 0.787-0.951, were highest in an upstream site and a conservation area site. A Canonical Correspondence Analysis accounted for 47% of the fish-habitat variation indicating that the presence and abundance of some species were partially explained by habitat differences. The upstream site with the least similar fish assemblage was also most divergent in habitat structure with increased vegetation and riffle formation. Species such as *Etheostoma flabellare* and *E. spectabile* that are associated with riffles were most abundant at this site. Also, *Lepomis macrochirus*, which prefers deeper pools, was most abundant in the larger combined channel below the conservation area. Although the reduced silt and bank erosion in the conservation area indicated enhanced water and habitat quality, there were few clear associations between fish assemblages and land use effects.

The Grasshoppers (*Orthoptera: Acrididae*) of Pennsylvania

Leo R. Donovall, III

Messiah College

This study seeks to provide information on the past and present diversity and distribution of Pennsylvania's grasshoppers (*Orthoptera: Acrididae*). As to date, the collections of the Academy of Natural Science (Philadelphia, PA) and the Pennsylvania State University's Frost Entomological Museum have been obtained, their data entered into a database, and the distribution of each species plotted. From this data, we have also been able to produce keys to the identification of Pennsylvania's Acridids within the subfamilies of *Oedipodinae* and *Gomphocerinae*. Currently, work is being done to produce a key to the *Melanoploid* (spur-throated grasshoppers) subfamilies of *Melanoplinae*, *Podisminae* and *Certacanthacridinae*. Also, collections from the Carnegie Museum of Natural History (Pittsburgh, PA), the Smithsonian Institute and Pennsylvania Department of Agriculture are being assimilated into the database and onto the species distribution maps. Following the conclusion of this five-year study, the results will be published via the web, in the form of keys, distribution maps and biological information.



Preparation of a More Stable Aminating Reagent and Several Quinolines

Brandon Gaddis

University of Indianapolis

There were two goals to my research last summer. One was to explore an alternate route of aminating pyridines, and the other was to synthesize various quinolines. The first part of my research dealt with synthesizing an N-aminating reagent and using it to aminate a pyridine. O-phenylphosphinylhydroxylamine is a more stable aminating reagent than O-mesitylsulfonylhydroxylamine

(MSH). MSH can be explosive if allowed to dry completely. The second part of my research consisted of synthesizing various quinolines. Their size and aromaticity have made them increasingly interesting to biotech and pharmaceutical companies. Typically, compounds having biological activity are relatively small, not more than 300 g/mol in molecular weight. Quinolines can be used as building blocks to synthesize other biologically interesting molecules.

Ticlopidine: A Potent Inhibitor of the In Vitro Human Liver Microsomal Oxidation of Efavirenz, a Nucleoside Reverse Transcriptase HIV-1

Jessica Elaine Muñoz

Our Lady of the Lake University

Efavirenz is an HIV-1 selective non-nucleoside reverse transcriptase inhibitor (NNRTI) used in combination therapy for the treatment of HIV/AIDS. Some patients fail therapy while up to 40% of patients develop CNS adverse reactions, some of which are serious necessitating discontinuation of the drug. Evidence in the literature suggest that this variable response is due to variability in the metabolism and pharmacokinetics of efavirenz as a result of concurrently administered drugs or genetic polymorphisms of the enzymes responsible for its elimination. Efavirenz undergoes extensive hepatic hydroxylation by the human P450 system, and the metabolites formed are further eliminated by glucuronidation. However, the CYP450 isoforms involved are not fully understood, making prediction of drug-drug interactions difficult. Using human liver microsomal preparations and recombinant human CYP450s, we identified the specific CYP450 isoforms responsible for the metabolism of efavirenz and tested the ability of ticlopidine, a drug used to prevent thrombosis after placement of coronary stents, to block efavirenz metabolism. Efavirenz was incubated at 37°C in human liver microsomes (or recombinant CYP450s) in the presence of NADPH for various incubation periods. The microsomal incubates were extracted and injected in to an HPLC system and the metabolites formed were monitored. We noted two hydroxylated metabolites of efavirenz (MI and MII). The formation of these metabolites was catalyzed predominantly by CYP2B6. Further, we have shown that ticlopidine (10mM) is a potent inhibitor of CYP2B6-mediated hydroxylation of efavirenz (10mM) (by >50% for MI and by >90% for MII). When incubated with 1mM efavirenz, ticlopidine (3.5mM) completely reversed the metabolism of efavirenz in human liver microsomes, as assessed by efavirenz concentrations remaining in the microsomal incubates of the control and the inhibited. Our in vitro data suggest that CYP2B6 is the main enzyme responsible for the hydroxylation of efavirenz. Variability in CYP2B6 expression may be responsible for the clinical variability in efavirenz pharmacokinetics and response. In addition, we have demonstrated that ticlopidine is a potent inhibitor of efavirenz metabolism. If our in vitro data can be extrapolated to in vivo conditions, precaution should be taken when efavirenz and ticlopidine are coprescribed.

Temperature Effects on Life History Explain Early Season Population Maxima of *Daphnia Lumholtzi* in a Reservoir Receiving Thermal Effluent

Denae R. Nash

Our Lady of the Lake University

Daphnia lumholtzi Sars, an exotic zooplankter, was introduced to North America in the 1980's, most likely from east Africa. Within two decades it has spread throughout the southeastern United States. In Illinois, *D. lumholtzi* typically appears in late May and exhibits a peak density in population midsummer. In 2002, we documented early season population maxima in May at sites throughout Newton Lake, a reservoir receiving thermal effluent from a coal-fired power plant in Jasper Co., IL. By July, *D. lumholtzi* was no longer present in the zooplankton community. Through laboratory experimentation, we investigated the effects of elevated temperature on life history to explain the observed decline. Individuals collected from Newton Lake were used to establish cultures at 23, 25, and 28 °C. Neonates which developed at each of these temperatures were randomly assigned to one of three exposure temperatures (23, 25, and 28 °C). We found significant effects of developmental and exposure temperatures on key aspects of life history (i.e., mortality, ephippia production, age at first reproduction, clutch size). Despite reports of temperature optima for *D. lumholtzi* above 25 °C, we speculate that 28 °C is stressful given that development at lower temperature appears to reduce individual tolerance to elevated temperature as an adult.



Sexual Response of Male Indonesian Water Pythons Toward Female Skin Extracts

Carly Reed

Malone College

Skin lipids believed to contain female sex attractiveness pheromone were extracted from the shed skins of two populations of Indonesian water python, *Liasis mackloti savuensis* and *Liasis mackloti mackloti*. Chromatograms of *Liasis mackloti savuensis* skin lipid extracts obtained in January lacked a spot present in chromatograms of extracts obtained from November skins (RF = .74; 95:5 pet. ether/ethyl acetate). The disappearance of this spot coincided with the end of breeding season. January skin lipid extracts from *Liasis mackloti mackloti* females were also analyzed by TLC, resulting in chromatograms similar in appearance to the January *Liasis mackloti*



savuensis extract chromatograms. As there were no earlier chromatograms of skin lipid extracts from *Liasis mackloti mackloti* to compare with, filter papers were impregnated with the extract and dragged down a three-pronged 'Y' maze. Trailing tests were run with *Liasis mackloti mackloti* males; both trials demonstrated males selecting the blank arm. Since a *Liasis mackloti mackloti* male used in one trial would not trail a live female either, the conclusion was drawn that *Liasis mackloti mackloti* mating season had ended.

Observation of the Correlation Between the Rate of Infestation of Mites and the Defensive Secretions of Males and Females of *Leiobunum townsendi*

Monica Marie Rivera

Our Lady of the Lake University

The rate infestation of mites and the correlation between the secretions of males and females were investigated in a sample of 640 harvestmen, *Leiobunum townsendi* in San Antonio, Texas. In *Leiobunum townsendi* the males and females have different secretions. It has been found that the secretions of female harvestmen are more complex than the secretions of male harvestmen. I hypothesized the more complex secretions of the female harvestmen should provide greater defense against mite infestation. I predicted that a greater number of mites would be found on the male harvestmen than on female harvestmen. I also predicted that more males would be infested with mites than would females. My last prediction was that the mites would respond differently to the secretions of males compared to the secretions of females. The results show there was a small percentage of harvestmen infested with mites. There was not a statistically significant difference in the number of mites between male and female harvestmen infested. The results also showed an almost equal percentage of male and female harvestmen infested with mites. The results failed to support my predictions. The results also suggested my hypothesis was wrong.

Effects of DOPAL on Cell Death in Non-Differentiated and Differentiated PC12 Cells

Alma J. Sanchez

Our Lady of the Lake University

Parkinson's is a neurological disease clinically characterized by decreased voluntary movement and tremor affecting 1% of people over 60. Its pathogenesis is caused by the loss of dopamine-containing neurons occurring mainly in the substantia nigra in the mesencephalon. Lamendorf's research suggests increased amounts of 3,4-dihydroxyphenylacetaldehyde (DOPAL) in-differentiated pheochromocytoma (PC12 cells) induced death in these cells. PC12 cells are derived from the chromaffin cells of a rat. Differentiation of

cells to a neuronal phenotype is obtained by treatment with nerve growth factor (NGF). The purpose of this study was to further investigate the effects of DOPAL on non-differentiated and differentiated PC12 cells. The trypan blue method and lactate dehydrogenase assayed the results. Non-differentiated PC12 cells were treated for 24 hours with different DOPAL concentrations (1 μ M, 10 μ M, 100 μ M, and 500 μ M). Cell viability was measured using trypan blue. Increased concentrations of DOPAL resulted in no significant cell death. When non-differentiated PC12 cells and differentiated PC12 cells (three day treatment with NGF) were treated with the same concentration of DOPAL for 24 hours, there was no significant increase in cell death. Differentiated PC12 cells with NGF treatment for seven days and non-differentiated PC12 cells were then treated with 10 μ M, 100 μ M, and 500 μ M DOPAL for 24 hours. Cell viability with trypan blue showed a slight increase death. When lactate dehydrogenase (LDH) leakage into the media was analyzed there was a significant increase in LDH leakage with increased concentrations of DOPAL. Over all the trypan blue assay suggests that DOPAL does not induce death in PC12 cells, while the LDH assay indicates DOPAL toxicity to the cells. The differences between the two assays should be researched further.

Selection and Analysis of Escape Variant Mutations Affecting Epitope I of the Simian Virus 40 Large Tumor Antigen

Alexandra M. Smith
Messiah College



The Simian Virus 40 Large Tumor Antigen (SV40 T ag) contains four distinct epitopes, I, II/III, IV, and V, that are individually recognized by one or more H-2b-restricted cytotoxic T lymphocyte (CTL) clones. The SV40 T ag induces cellular immortalization and tumor formation by functionally inactivating multiple cell cycle regulatory proteins. Epitopes within the T antigen also induce CD8+ T lymphocyte responses that can effectively control the growth of T antigen-expressing tumors in vivo. We are interested in how mutation of these individual epitopes will allow for the survival of T antigen-expressing tumors in the presence of CD8+ T cell populations focused primarily on a single epitope. Escape variant populations have been selected by repeated exposure of T antigen transformed cells to the epitope I specific CTL clone, K-11, under conditions where the independence of individual mutations could be assured. Variant epitope sequences were amplified by PCR, individual amplification products were subcloned to generate recombinant libraries, and the nucleotide sequences of the epitope regions harbored by multiple, randomly chosen recombinant plasmids were determined. The results of this study will be discussed in light of previous epitope I selections.

Complement Receptor Type 1 – Determining the Functional Binding Sites of Complement Proteins C3b and C4b by Site Directed Mutagenesis

Elizabeth Smith

McKendree College

The complement system plays a major role in the immune system, defending the host against infectious disease. Complement activation results in the deposition of complement proteins, C3b or C4b, on foreign antigens and in some cases self-tissue. Complement receptors function in binding these ligands. Complement Receptor Type 1 (CR1) is a transmembrane protein found on the surface of erythrocytes. As an immune adherence receptor, CR1 functions in binding C3b or C4b opsonized foreign antigens, removing them from circulation and transporting them to the spleen and liver to be destroyed. This study focused on finding single amino acids in the active site of CR1 that are critical in binding to residues on C3b or C4b. Site-directed mutagenesis of six amino acids in active site 2 of CR1 was performed to identify functional binding sites. The amino acids Phenylalanine 941 and Lysine 939 were found to be functionally important in binding C3b and C4b, while the other amino acids had minor contributions on binding. Determination of specific binding sites of CR1 aid in understanding the functional role of CR1. This may lead to possible therapeutic benefits preventing self-tissue damage in cases such as stroke, organ transplantation, rheumatoid arthritis, or lupus.

The Effect of Growth Media on Production of the Antibiotic, Bacilysoicin, by *Bacillus subtilis* 168

Beth Smoker

McKendree College

Bacillus subtilis 168 produces a newly discovered phospholipid antibiotic, named bacilysoicin. Past research has shown a correlation between the bacterial production of various antibiotics and the carbon source utilized by the bacterial species during antibiotic production. The goal of this project was to determine the effect of the carbon source utilized by *Bacillus subtilis* 168 on the production of bacilysoicin. *Bacillus subtilis* 168 was grown in a defined media, which was systematically substituted with three different carbon sources: glucose, glycerol, and sucrose. The amount of the carbon source in each media was kept constant. Growth curves were constructed for *Bacillus subtilis* 168 cells growing on each of the three growth media variations and showed consistent differences in the growth rates. The antibiotic was extracted from the cells using butanol extraction, ethyl acetate extraction, and Silica gel chromatography. A bioassay was performed once for each growth media variation in order to test for antibiotic activity of the cellular extract. Antibiotic activity was confirmed by the presence of a zone of inhibition on a lawn of *Staphylococcus aureus*, which functioned as the test organism. All three carbon sources yielded crude extracts which were determined to have antibiotic

activity. The extract obtained from the sucrose-substituted media yielded the largest average zone of inhibition, possibly indicating a higher level of antibiotic production in sucrose containing growth media. High pressure liquid chromatography (HPLC) was then used to isolate and quantify the amount of antibiotic present in each sample. The data obtained from the HPLC system yielded inconsistent, highly variable results and therefore I was unable to determine if carbon source has an effect on bacilysoicin production. Although the results of this project are inconclusive, methodological improvements will be discussed that might allow for more conclusive and useful data to be obtained.



Site of student paper presentations

Proceedings of the National Convention

**Thursday March 27, 2003
Executive Council Meeting
Minutes**

Meeting Convened at 7:55 p.m. Past President Jim Hall brought the meeting to order.

Roll Call

Officers: Harold Wilkinson Executive Director, Jim Hall Past President, Jim Reynhout President, Cary Guffey President Elect, Glenn McQuaide Treasurer

Chapter Representatives: David Hahn Alpha Gamma, Millard Niver Alpha Gamma, Joe Burnell Rho, Bernadine Cochran Beta Xi.

9 Chapters are in Attendance

Approval of Previous Minutes: Minutes for the convention April 11-13, 2002 at Messiah College were reviewed. Changes were made and minutes were approved.

Reports from National Officers

Executive Director Harold Wilkinson: a summary report of the past year was presented. See the National Office Activity Report on the next page. Report was accepted by the group..

Also presented to the group was a chart showing the growth of the organization over the time since it was established. There was some discussion of as to why the numbers were so low in 1999. It appears to be due to a change in the way memberships were counted. Dr. Wilkinson will check into the records.

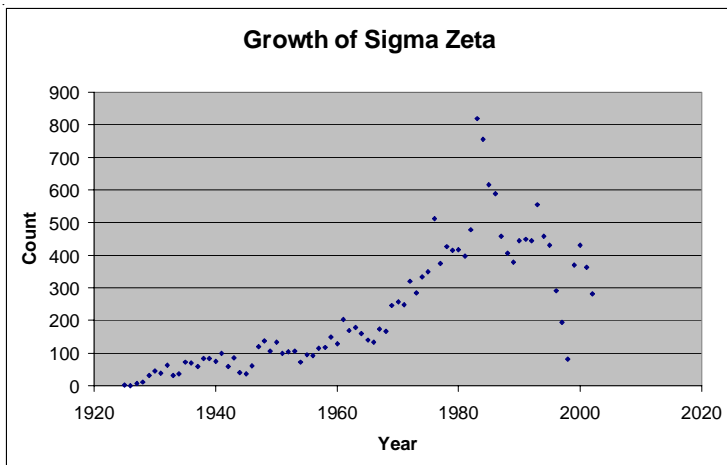
Executive Director
Dr. Harold Wilkinson



National Office Activity Report
30 March 2002 to 15 March 2003

Chapter Name	New Student Members	New Faculty Sponsors	Dues Received	Date of Last Election Report	Officer Report Received	Pins/Medallions Disbursed
Beta	7		\$175.00	12/1/02	02-03	
Gamma			0.00			
Delta			0.00			
Epsilon			0.00			
Lambda	21		582.00	10/8/02	02-03	19
Mu			0.00			
Xi			0.00		98-99	
Pi	13	4	350.00	2/5/02	02-03	
Rho	21		525.00	11/19/02	01-02	
Sigma	7		175.00	2/12/03	02-03	
Tau			0.00			
Upsilon	25		625.00	11/7/02		
Phi	3	2	90.00	3/5/02	02-03	5
Chi			0.00			
Psi			\$0.00			
Alpha Beta	5		125.00	11/21/02	02-03	
Alpha Gamma	8		260.00	4/22/02	00-01	10
Alpha Delta			0.00			
Alpha Epsilon			0.00			
Alpha Zeta			0.00			
Alpha Eta			0.00			
Alpha Theta	13		325.00	5/8/02	00-01	
Alpha Kappa			0.00	10/1/00	00-01	
Alpha Lambda			0.00			
Alpha Mu			0.00	4/12/00	01-02	
Alpha Nu	0		0.00	4/12/01	01-02	
Alpha Xi	15		375.00	5/18/02	98-99	
Alpha Pi			0.00	4/25/00	00-01	
Alpha Rho	0		0.00	11/14/01	01-02	
Alpha Sigma	9		225.00	4/30/02	01-02	
Alpha Tau			0.00			
Alpha Upsilon	0		0.00	2/25/02	02-03	
Alpha Phi	8		200.00	5/4/02	00-01	
Alpha Chi	0		0.00	2/24/01	00-01	
Alpha Psi	4		112.00	4/8/02	02-03	4
Alpha Omega			0.00			
Beta Alpha			0.00		01-02	
Beta Beta	0		0.00	2/29/02	02-03	
Beta Gamma			0.00			
Beta Delta	15		445.00	10/27/02		15
Beta Epsilon			0.00	4/27/00		
Beta Zeta	7		175.00	5/3/02	02-03	
Beta Eta			0.00			
Beta Theta	0		0.00	4/25/02	00-01	
Beta Iota	0		0.00	4/26/01	99-00	

Chapter Name	New Student Members	New Faculty Sponsors	Dues Received	Date of Last Election Report	Officer Report Received	Pins/Medallions Disbursed
Beta Kappa			0.00			
Beta Lambda	13		325.00	11/7/02	02-03	
Beta Mu	29		812.00	2/13/03	01-02	29
Beta Nu	34		955.00	4/8/02	02-03	35
Beta Xi	5		140.00	10/3/02	02-03	5
Beta Omicron	18		555.50	4/16/02	00-01	33
Somerset Associate	1		25.00	4/16/02	98-99	
Count	29	2	22	33	32	9
Total	281	6	\$7,576.50			155



National Treasurer Report: Glenn McQuaide – Provided no written report. Presented a suggestion that the time interval for financial reporting be changed from an April 1-March 30 reporting year to July 1-June 30. He would produce an additional report to report finances between April 1, 2002 and July 1, 2002 to be included in the 2003 Sigma Zetan. The 2004 Sigma Zetan would contain a report from July 1, 2002 to June 30, 2003. The audit at the 2004 national would be for this same time period.

Motion – A Motion to change the accounting period to July 1-June 30 was seconded and passed.

A financial report included in the 2002 Sigma Zetan was sent to Bob Moffitt. It was from the period of April 1, 2001 to April 1, 2002 and reflects a balance

of \$34,758.51. This is updated from a previous number of \$31,189.18. Current balance is \$ 37,979.83. He reported that new memberships of 400 would maintain our current spending needs. There is a checking account at Columbia Bank for paying bills. The committee accepted this change and the submitted report. Forms were distributed for travel reimbursement to the convention.

Web Master's Report: Bob Kistler The following changes or additions have been made to the web site.

1. The following chapters were added to the list of chapters <http://www.sigmazeta.org/campus/index.html>.

Pikeville College - Beta Xi

Madonna University — Beta Omicron

Several others updated contact information and Malone College added a link to their local chapter web site.

2. A web form for submission of abstracts and meeting registration was developed, added to the convention page, and used by a number of students (5 50 far) for submissions of abstracts and other related convention information. With this form on-line, although the form will need to be modified each year, a standardized submission process becomes more possible, eliminating the need to recreate new materials every year.

3. The *Sigma Zetan* is now on line from 1929 * 2000 and is linked from the “About Sigma Zeta” link on the home page. <http://www.sigmazeta.org/info/history.html>>

4. Historical Archive Documents have been linked from the history page. <http://www.sigmazeta.org/info/history.html>

- Alpha chapter charter
- Constitution 1942 version
- Constitution and History 1947 version
- Constitution brochure 1947 version
- Constitution and History 1956 version
- Constitution and History 1959 version
- Constitution and History 1971 version
- Constitution and History 1977 version
- Development Fund

5. The scrapbooks have been digitized and will be placed into a slideshow type of archive on line in the near future, most likely linked from the “About Sigma Zeta” page.

6. The next need is to get a listserv set up. I have initiated the set up of two lists. One a list of campus advisors and one more general list for Sigma Zeta Chapter officers/students that could serve to increase communication between chapters. These mailman lists are secure and you must be a member to post to the list. The advisor list will be managed/maintained by the webmaster and Harold. The general list would be an opt-in opt-out list linked from the web site chapter page. These lists should be ready for use soon.

I had hoped to add more graphics and iconography scattered throughout the site, but has not received any images from the chapters other than the convention pictures linked from the convention page. I still think that this is a good idea and will continue to pursue the idea.

Motion – To accept the Webmaster report. Seconded and passed

Historian Report: Bob Moffitt

Upon approval of last year's council motion to allot \$850 for the purchase of software and hardware for publication of the Sigma Zetan and archiving of the historical records of the society, the office now has:

- One TDK 32/10/40X CD burner
- One hp scanjet 5400c flat bed scanner
- One suite of Adobe publishing applications including Photoshop 7, Acrobat 5, Pagemaker 7, and Illustrator 10 registered to Sigma Zeta. In addition. CD's and cases were also purchased.

I have spent some time scanning archive records, which include:

- The entire set of Sigma Zeta Journals from 1929 to date that are in existence
 - The three sets of photo scrapbooks assembled by Historian David Dautenhahn during his tenure as Historian from 1970 - 1993
 - Copies of previous editions of the History and Constitution
- These records have all been placed on a CD in pdf (journals and histories) and jpeg (scrapbooks) formats.

I propose that the Historian continue to archive our historical records and artifacts in digital format. Additionally, I think that a very useful project would be to use the scans of the journals and perform OCR (optical character recognition) on those portions where there are records of the council meetings so that all previous yearly meeting minutes could be searched by text.

Publicist Report: Bob Moffitt

The publication of the Journal from the 2002 convention at Messiah College will occur in April 2003. It is currently available in pdf format and I recommend that it be made available on the SZ web site. Journal publication of the 2003 San Antonio convention can occur within 6 weeks of receiving all pertinent materials.

No work was done on the SZ Handbook, as the publicist office did not receive any corrections from the previous year's ad hoc committee.

An updated copy of the SZ History and Constitution is attached with this report. I have endeavored to make spelling and typographical error corrections. It also includes up-to-date names for the various national officers.

In the good news department: I received an email from Burton Webb at Indiana Wesleyan University that the chapter had been inactive for a while, but some students just recently approached him about reviving it. They are in the process of getting it up and running again.

Motion – To accept the Historical and Publicists report. Seconded and passed

President-elect Report: Cary Guffey

Most of my efforts during the past year were devoted to preparing to host this year's national convention. In April 2002 I spoke with OLLU's Vice Provost for Information Services, Howard Sanchez. Mr. Sanchez indicated that he and his staff were eager to help with any technological needs for the 2003 convention. As a result of this conversation, student presentations will be broadcast over the Internet for the first time. Presentations will be web-cast live and will be archived for later retrieval. The link to the presentations can be found on Sigma chapter's web page.

In early fall 2002 I contacted a colleague, Dr. Kevin Jansen, in the biology department at the University of Virginia's College at Wise (Alpha Chi chapter; formerly Clinch Valley College of the University of Virginia). Though Dr. Jansen initially expressed great interest in attending this year's convention, follow-up conversations failed to result in attendance by that chapter. He indicated to me that the chapter is locally active even though it has not attended any national conventions recently.

I worked with Mike Patterson, the current Webmaster of Sigma chapter, and Bob Kistler, national Webmaster, to provide electronically as much information about this year's convention as possible. As a result, both registrations and abstracts were submitted electronically, and convention

information could be updated as soon as it became available. The only significant problem that occurred was that for a short period of time a change to a computer server resulted in the possibility that students submitted abstracts that were not received by me or Bob Moffitt, though students thought that their abstracts had been submitted successfully. Once Bob Kistler detected this problem, he immediately made the necessary corrections and we are not aware of any abstracts “lost” as a result of this flaw.

The biggest difficulty that occurred in exchanging information electronically was the lack of up-to-date contact information for chapter advisors. Bob Moffitt and I put together a current list of both the home pages for those schools listed on Sigma Zeta’s web page and the email addresses for chapter advisors. This list was sent to Bob Kistler who then updated the national web page. I have included a copy of my list with this report.

Motion: to accept was seconded and passed.

President report: James Reinhout

At the closing ceremony of our convention last year at Messiah College, I issued a challenge to all chapters in attendance to try and make the upcoming year productive and fruitful for their home group. I backed up that challenge with a promise of \$100.00 to be given to the winners of the Founders cup this year at San Antonio. Included in the challenge was a hope that each chapter would make a significant effort to attend this year’s convention as have the chapter from San Antonio for many previous conventions at great distances from their own. I - therefore would like to commend all those of you who have come from some considerable distance to attend this meeting. Likewise, I am very appreciative of all the efforts and planning that the host chapter here at Our Lady of the Lake University have undertaken to make this a fine and memorable convention.

As I am sitting here at Bethel and finalizing this report, the United States has just initiated a war to liberate Iraq from the dictatorship of Saddam Hussein. Regardless of what each of us may feel or think about war in general or this war in particular, these events will surely impact on us and in some ways on the success of this convention. I hope and pray that the final result brings peace and stability to all peoples around the globe!

In November of last year I received an e-mail request from the President of the Alpha Theta chapter at Asbury College that has been active locally but has not been attending the National Convention. With a new advisor and many new members they were hoping to rejuvenate and revitalize their group and asked for any suggestions. I responded with a list of seven suggestions that I am attaching to the end of this report. These are by no means inclusive

nor necessarily brilliant, but my hope is that they will stimulate us collectively to think about ways to energize and motivate our chapters which are active and to further prompt inactive chapters to once again take up the challenge and resume functioning to the potential benefit of its science and mathematics students.

I regret to say that our own chapter at Bethel will not be in the running for the Founders' cup this year. When Sigma Zeta began at Bethel in 1983, there were no other Science and or Math clubs or societies in existence on our campus. Now there are five besides us: Tri Beta in Biology, Sigma Pi Sigma in Physics, Restoration Group in Environmental Studies, Premedical Club, and Chemistry Club. Students tend to gravitate toward those organizations that most closely reflect their primary interests, which is perfectly understandable. While some belong to more than one group, the dedication toward helping each function and flourish gets diluted quickly and typically toward the one more focused to their major or primary interest. I have even heard students claim that it is improper to belong to more than one group. As a result the broader focused organization such as Sigma Zeta tend to get short shrift and have a lower priority on their schedules and in their minds.

While Sigma Zeta is alive at Bethel, I cannot say that it is well. We currently have 52 student members and all faculty members in the sciences and mathematics are technically members. Yet, when it comes time for work projects and/or organizational duties, Officers, advisors and a small group of students are all that show up. With the busy schedules that most of us have, this too is understandable. Classes, laboratories, work, research projects, sports programs, music groups, personal priorities and interactions all are important components of a quality college education. What place then does an organization such as Sigma Zeta have?

I am a firm believer and backer of Sigma Zeta. My participation as an advisor and as National President is predicated on this premise. I am especially committed to it on the grounds that our Biology majors are required to take classes in each of the other disciplines of the sciences and mathematics as part of the major. Sadly, many other advisor and I are entering into the waning years of our academic careers. For Sigma Zeta to continue to provide the opportunities for science students to participate in research and presentation of their efforts in conventions such as this one, it will need to be energized and revitalized. We need new blood, new visions, new and younger faculty to take up the charge and extend the value and promise of Sigma Zeta into the coming years for our students' sake. I am encouraged to see this happening here in San Antonio and in some of the other chapters.

We are currently in need of a historian/publicist who will accept the challenge to carry our message and purpose into the future. We cannot allow Sigma Zeta to stagnate and decay. It is too valuable a resource for our programs and the future of our students.

Here are the points mentioned in Dr. Reynhout's report.

1. Design and purchase a T-shirt that advertises your organization and gives members some sign of belonging.
2. Make sure that the membership knows that you and the other officers and advisor meet on a regular basis to plan the events. Otherwise, they think that nothing is going on.
3. We all need money to conduct our affairs. Our Senate gives us some funds, but they are minimal. They surely will not help us to get to San Antonio for the National Convention. We offer our services raking¹ washing windows, trimming hedges, etc. for a "donation" which can then be tax deductible. It sure beats selling candy bars and the like. It also gets members together for fun and fellowship, even while working.
4. We have a fall and spring banquet, partially funded by our Science Division. We invite speakers from the University and surrounding companies to tell us what is going on in their areas. Your own faculty is likely to be good sources of references for such possible speakers. We have also found it useful to give your faculty opportunity to talk about their own research interests to the broader audience of members.
5. Science fairs is a good activity as you indicate. We also have a Science Museum, which we can visit. Do you have anything nearby?
6. We have traditionally held a winter retreat at a local (1 hour away) camp with cross-country skiing, broom ball, skating, food, games, etc. It has been more difficult lately to get a good attendance at these, since everyone is so busy!

Encourage your seniors to plan on presenting their senior research project data (assuming you have such) at the National convention

Motion: to approve was seconded and passed.

A discussion of how to get mathematics more involved in the activity of the organization at the local level. There is a growing body of competing organizations that interfere with the commitment of students to the organization. A greater effort needs to be made to include all disciplines of the organization in local activities. It was suggested that having co-advisors who represent the different disciplines would be worth while. We should put

a discussion of developing associate chapters at junior colleges on the agenda for an advisors meeting. There was a strong recommendation that we sent a letter to administrators of the various inactive chapters to see if we could get them reactivated.

Past President Report: Jim Hall

Included in the duties of the Past President is the charge to try to increase the number of new chapters and to increase the activity of current chapters at the national level. Both of these activities support the purpose of Sigma Zeta and the health of its future.

There are several small private universities in the San Antonio area (St. Mary's Univ., University of the Incarnate Word, Texas Lutheran Univ., and St. Edward's Univ.). In the past when I have contacted science faculty at these institutions to inform them about Sigma Zeta, the response that I have gotten is that they were not interested in starting a competing honor society to those that they already have (ex. Beta Beta, American Chemical Society). When I mentioned that our chapter was hosting Sigma Zeta's national convention in spring 2003, I did raise some interest. I have invited faculty and students from the biology, chemistry and math departments from these universities to attend the student presentations at our conference on Friday and Saturday mornings. If some students and faculty do attend, they may see qualities in Sigma Zeta that they find attractive.

Based on registrations for the 2003 convention, there are nine chapters attending this year's meeting, with two that have not been participants in the national meeting for several years - the Pikeville College chapter (Beta Xi) and the University of Indianapolis chapter (Rho). Perhaps the fact that San Antonio is a popular tourist destination helped to spark attendance from these two chapters. Our goal should be to encourage future attendance at the national meeting by these two chapters by staying in touch with their advisors and students in the coming months. The Our Lady of the Lake (Sigma) chapter had not been active at the national level for decades prior to the mid-1990's, but the experience was so positive at the meeting that we attended in 1995, that we have been in regular attendance since. If every year or two we can add another chapter to those already active at the national level, the organization should remain healthy.

Motion: to approve was seconded and passed.

Old Business

Advisors Handbook - No further action to be taken at this time. Online version is available to chapters.

Web Forms – can we make it possible to have the report of election converted for online submission to make the process easier? Use the email reminder system to get chapter reports. Could submitted names be emailed back to advisors to make certain it is correct? Another possibility would be to send a link on the email to the website where the form could be located.

Officers Contacting Inactive Schools - Kentucky Wesleyan advisor has competing groups making it difficult for him to keep up. Asks if they should discontinue the chapter. It was recommended that we encourage the school to maintain recognition but not have local activities. Steve Publicki of the Alpha Delta Chapter submitted an email requesting the same thing. Harold should take the same approach.

Gamma Chapter – Funds have been invested and the organization waits possible reactivation.

Chapter Activity Reports – Remind students and chapter advisors that the annual activity report should be submitted by the end of the school year so it can be included in the Sigma Zetan.

New Business

Committee Assignments – Jim Reynhout - Forms were distributed for sign-up of students for the following committees: Founders Cup, Nominations, Honor Award, Auditing, and Resolutions. It was suggested that each chapter provide one or two names of students to serve on the various committees.

Founders Cup

Chairman – Glenn McQuaide
Monica Rivers, Sigma
Ana Urbina, Sigma
Joshua Knifley, Alpha Beta
Emily Skaggs, Alpha Beta
Amy Smith, Beta
Carrie Linnertz, Beta
Brian Powell, Alpha Gamma
Rebecca Gailswyk, Beta Iota

Honor Award

James Reynhout, Beta Iota
Harold Wilkinson, Pi

Nominations

Chairman, Jim Hall
Jessica Munoz, Sigma
Sarah Brown, Beta Lambda
Ryan Reynolds, Alpha Beta
Sarah Galle, Pi
Jonathan Morgan, Beta
Beth Smoker, Beta
Rachel Buhrt, Rho
Karrie Biliter, Beta Xi

Auditing

Chairman, David Hahn, Alpha Gamma
Vanessa Veliz, Sigma
Justin Spears, Alpha Beta
Nancy Kuchar, Pi
Melissa Adams, Beta
Alex Smith, Beta Lambda
Carly Reed, Alpha Gamma
Brandon Gaddis, Rho
Paul Johnson, Beta Iota

Resolutions

Chairman, Bernadine Cochran
Mike Patterson, Sigma
Marisa Arguredo, Sigma
Lucie Diaz, Sigma
J.R. Sierra, Sigma
Amy W, Hall, Alpha Beta
Rebecca Hook, Pi
Carrie Whelan, Pi
Andrea Levin, Beta
Melissa Smith, Beta
Sara Nelson, Alpha Gamma
Justin Sync, Alpha Gamma
Scott Cline, Rho
Angel Justice, Beta Xi
Jessica Kekker, Beta Iota

Travel Grant - The Beta Xi chapter from Pikeville College submitted a request for travel grant to this year's convention. The request was for \$150 dollars to help with the cost of 3 individuals.

Motion- to approve the grant was seconded and passed.

The Rho Chapter at the University of Indianapolis submitted a second request for \$200. Four members are attending.

Motion- to approve was seconded and passed.

Mileage Question – A motion was made to change the current per mile allotment from \$0.20 to \$0.30.

The motion was seconded and passed.

Glenn McQuaide was requested to make a careful analysis of travel expense for future use.

Jewelry – It was suggested that we offer a gold pin with a tie-tack type back in addition to the current safety pin type clasp. Harold will order some.

Travel Reimbursement - Expense vouchers were distributed for individuals to fill out. Reimbursement is at a rate of 20 cents per mile. Checks will be issued Saturday.

Convention Preparation Report – Jim Hall –All is ready

Fall Meeting Plans – Motion to hold the fall meeting in November was approved. Meetings will begin at 1:00 p.m. All National Officers are to attend. Advisors from any chapter may also attend at their own expense. It is suggested that ways be sought after to assist the attendance of as many advisors as possible.

Future Convention Sites - Year 2004 – Millikin University, 2005 - Malone College, 2006 - McKendree

Opening Session

Friday March 28, 2003

Session opened at 8:30 am

Attendance – 63

Dr. James Reynhout opened the meeting with the Historic Gavel in the Providence Blue Room. He welcomed the members of Sigma Zeta to the conference. He then introduced Jim Hall, host chapter representative to make announcements.

Dr. Hall welcomed the members and introduced Sister Elizabeth Anne Sueltenfuss, Former National President of Sigma Zeta and Our Lady of the Lakes University. She served as the university president for almost 20 years.

Sister Sueltenfuss gave a brief history of her college years at OLLUSA. She belonged to The Madam Curie Science Club and help charter the Sigma Chapter of Sigma Zeta. She praised the work of Jim Hall in maintaining an active chapter and congratulated the students presenting papers.

Dr. Reynhout made introductions of the national officers and read the committee assignments. Executive Director Harold Wilkinson, President Elect – Carry Guffey, National Past President – Jim Hall, National Treasurer Glenn McQuaide, Bob Moffitt (In Absentia) -National Publicist/Historian, Bob Kistler (In Absentia) - National Webmaster.

Committee assignments were read and committees were allowed to meet and make plans for their responsibilities. Committees were instructed to meet whenever possible. The meeting adjourned for lunch.

Drs. Hall and Guffey announced the following: Field trip to Government Canyon leaves 12:30 p.m., Alamo River Walk – 12:30, South West Foundation for Biomedical Research – 1:30, South West Research Institute – 1:30. Trips should try to end by 4:30. The Banquet will be at 6:30 in the Chapel Auditorium. The meeting was adjourned for Student Research presentations between 9:00 and 11:00 a.m.

Field Trips

Friday afternoon was spent attending field trips. Destinations included: government Canyon, Alamo River Walk, South West Foundation for Biomedical Research, and South West Research Institute.

Friday Banquet Session

The banquet began at approximately 7:00 at the Sacred Heart Chapel Auditorium. Dr James Hall officially greeted the members and guests in attendance. Sister Isabelle Ball, Dean of the College of Arts and Science, gave a prayer. A choice of Mexican or Italian dinner was provided.

Honor Award Presentations

The following students were presented honor awards. Dr. Harold Wilkinson read the petitions and President Reynhout presented the awards.

Sandra Alcala
Sigma Chapter
Our Lady of the Lake University

The Sigma chapter of Sigma Zeta is proud to nominate Sandra Alcala for the 2003 Sigma Zeta Honor Award. Sandra is a graduating senior with a 3.67 OPA at Our Lady of the Lake University. Sandra has earned academic recognition on the Dean's List five different semesters beginning in spring 2000. During the summer of 2002, Sandra participated in a Summer Research Opportunity Program (SROP) at Indiana University Purdue University in Indianapolis. She investigated GABA-Dopamine Interaction in Alcohol Motivated Behaviors under the direction of Harry June, Ph.D. As a McNair scholar at OLLU, Sandra is continuing to gain research experience working on Gated Ca^{2+} Transport Across Liposomal Membranes. Sandra plans to pursue a career in biomedical research in neuro-psychopharmacology, and she has been accepted to a

PhD. program in neural science at Indiana University and a PID. Program in Neuroscience University of Minnesota and is also awaiting the response from other graduate programs. Because of her outstanding academic performance and research experience we are confident that Sandra will make valuable contributions in the field of neuropsychopharmacology.

Scott Cline
Rho Chapter
University of Indianapolis

The Rho Chapter of Sigma Zeta at the University of Indianapolis wishes to nominate Scott Cline for the Sigma Zeta Honor Award. Scott was elected president of the Rho Chapter for two years and has provided the leadership necessary for the Rho Chapter to return to national activity. Under Scott's leadership, the Rho Chapter has become the only honor society at the University of Indianapolis to do the work necessary to be designated a Registered Student Organization and share in funds generated from student activity fees. The Rho Chapter has used these funds to support fun and educational activities for members and community projects. As Rho Chapter president, Scott was a member of the organizing committee for the Central Indiana Regional Science and Engineering fair hosted annually by the university. Scott organized the judging by Sigma Zeta members and the presentation of multiple Sigma Zeta awards in the elementary and middle school divisions of the fair. Scott has provided the chapter with outstanding leadership while maintaining and even improving his classroom performance. The Rho Chapter congratulates Scott on his admission to the 2003 entering medical class of the Indiana University School of Medicine and is pleased to nominate Scott as representative of members of the Rho Chapter and as an example to future leaders of the chapter.

Rebecca Hook
Pi Chapter
Millikin University

The Pi Chapter of Millikin University nominates Rebecca Hook for the Sigma Zeta Honor Award. Becca is a senior Biology major who has served as the President of the chapter for the 2002-2003 school year and has been an active member in Sigma Zeta since 2001. Becca has been an incredible supporter of our group. She also serves as Vice President in the Alpha Epsilon Delta pre-medical/dental group. In addition to her work in these organizations, Becca has been a dynamic leader campus-wide as well. She has served as a Freshman

Orientation Leader in Millikin's University Seminar course and has been active in service learning projects as a tutor for GED students.

She has been accepted into medical school and plans to pursue a career as a Physician. Becca, we would like to take this opportunity to publicly recognize your hard work and to thank you for your tireless efforts given to our group and our University.

Amy W. Hall
Alpha Beta Chapter
Campbellsville University

The Alpha Beta Chapter is proud to nominate Amy W. Hall as the 2003 recipient the Sigma Zeta Honor Award. Amy is the wife of John Hall, a mother of a 3-year-old named Brianna, and is expecting another child later this year. She is a senior at Campbellsville University with a grade point average of 3.91 and will be graduating in May of 2004 with majors in Biology and Chemistry, along with minors in mathematics and education. She is a native of Campbellsville, Kentucky and a 4.0 graduate of Taylor County High School. Amy has been consistently recognized for academic achievement by being named to the Dean's List. She is currently serving as president of the Alpha Beta Chapter. Amy possesses a spirit of humanitarianism; she also promotes connectivity in the Alpha Beta Chapter. She exemplifies Campbellsville University's standards of leadership, fellowship, and scholarship. Her tested attributes quality her for this award. Her accomplishments should be applauded.

Banquet Speaker

Dr. Ronald Blanck D.O. was the guest speaker after the banquet. His talk focused on bioterrorism. Definitions of terms were present to the audience. Preparation for disaster was emphasized. Terrorists want to disrupt the economy and confidence of the United States.

Closing Business Meeting

Saturday March 29,2003

The closing business meeting was called to order by President James Reynhout. He extended a special thanks to all the participants in attendance at this convention and especially to the Sigma Chapter for hosting the meeting. They were also thanked for the many miles they have driven in the past to Conventions. There was a special thanks for the work of members of the various national committees and for the excellent speech by Dr. Blank. Bob Moffitt was thanked for the labor-intensive work of compiling all the past Sigma Zetans onto a CD and for his service as the Publicist/Historian for the past two years. A round of applause was requested in his behalf. Dr. Reynhout then introduced the current National Officers. The chapters from Pikeville and Indianapolis were also greeted

Dr. Harold Wilkinson – National Executive Director gave a brief history and update of office activities. He showed the original installation charter for the Alpha Chapter and reported on activity of the chapter. He explained the composition of the gavel and the significance of the Founders Cup. This information can be found in the constitution.

Dr. Wilkinson conducted a roll call of chapters with the following results:

<u>Chapter</u>	<u>University</u>	<u>Number of Attendees</u>
Alpha Beta	Campbellsville	1 faculty, 5 students
Alpha Gamma	Malone	2 faculty, 4 students
Beta	McKendree	1 faculty, 8 student
Beta Lambda	Messiah	1 faculty, 3 students
Beta Iota	Bethel	1 faculty, 3 students
Beta Xi	Pikeville	1 faculty, 2 students
Pi	Millikin	1 faculty, 8 students
Rho	U. of Indianapolis	1 faculty, 3 students
Sigma	Our Lady of the Lake	2 faculty, 18 students
Total		11 54

Committee Reports

Auditing Committee

We, the members of the auditing committee, have examined the records provided to us by the treasurer for the year April 1, 2002 to March 7, 2003.

Only one correction was found. One invoice to a local chapter had been marked “paid in full” when it was still an outstanding balance. When this was brought to the attention of the treasurer, he noted the correction on the invoice. In the process, he discovered that it was his responsibility to remind local chapters when they have unpaid invoices, and to pay them. All other records appeared to be in order.

The committee wishes to thank the treasurer for his assistance and willingness to examine our duties as a committee. However, there was initial confusion as to what our responsibilities as a committee were. We therefore recommend that a list of the duties of the committees be prepared which can be distributed at the time of committee assignments.

Respectfully submitted,

Dr. David W. Hahn, Alpha Gamma, Chair

Paul Johnson, Beta Iota

Carly Reed, Alpha Gamma

Justin Spears, Alpha Beta

Nancy Kuchar, Pi

Brandon Gaddis, Rho

Vanessa Veliz, Sigma

Melissa Adams, Beta

Alexa Smith, Beta Lambda

Resolutions Committee

Be it resolved that...

- Begin Thursday meetings in order to return to our motel before midnight.
- Not play hide-and-seek from our advisors
- Never, never ride city bus transit again!
- Provide laser pointers for students presenting anything containing organic structures
- Always have breakfast burritos as breakfast for morning meetings (especially potato and egg).
- Not get caught being a mouse. The traps are harmful and the run away.
- Stop changing the weather by blinking the text time the national convention is in TEXAS—We came here to enjoy the weather.
- Provide more than one guided tour for members traveling to the city for the first time.
- Keep it WARM inside when it is COLD outside.
- Thank the Sigma chapter for hosting a very enjoyable convention
- Reserve motels where there are no worries about gunshots or the trip from our vehicle to the motel door.
- To have bug-less water at next year's national convention
- To thank Dr. Ronald R. Blanck, D.O., for his informative and timely presentation of weapons of mass destruction and bioterrorism.
- To be punctual and follow the itinerary.
- To remember the Alamo.

Chairman, Bernadine Cochran

Mike Patterson, Sigma

Marisa Arguredo, Sigma

Lucie Diaz, Sigma

J.R. Sierra, Sigma

Amy W, Hall, Alpha Beta

Rebecca Hook, Pi

Carrie Whelan, Pi

Andrea Levin, Beta

Melissa Smith, Beta

Sara Nelson, Alpha Gamma

Justin Sync, Alpha Gamma

Scott Cline, Rho

Angel Justice, Beta Xi

Jessica Kekker, Beta Iota

Nomination Committee

Chair - Jim Hall (Sigma)

Committee Members:

Karrie Biliter	Beta Xi
Ryan Reynolds	Alpha Beta
Sarah Galle	Pi
Rachel Buhrt	Rho
Jessica Munoz	Sigma
Johnathon Morgan	Beta
Sara Brown	Beta Lambda

The Nominations Committee presents the following slate of National Officers for 2003-2004:

National Executive Director - Harold Wilkinson, Pi
National Treasurer - Glenn McQuaide, Alpha Beta
National Publicist/Historian – Cary Guffey, Sigma
National Webmaster - Bob Kistler, Beta Iota
National President Elect - Robb Van Putte, Beta
National President - Gary Guffey, Sigma
National Past President - Jim Reynhout, Beta Iota

Founders Cup Committee

The Pi and Rho chapters submitted applications. The 2003 Founders Cup was presented to the Rho chapter from The University of Indianapolis, Indianapolis, Indiana. Executive Director Harold Wilkinson read the application. Glenn McQuaide transferred the trophy from the Alpha Beta chapter to the Rho Chapter officer. The chapter was reminded that they have the responsibility of inscribing the trophy with the Chapter name and year of winning.

Dr. Reynhout then presented the Rho chapter with a \$100 award for meeting a challenge issued at the

2002 convention. That challenge was to all chapters to become more active in attending the convention. This was the first year for the Rho chapter to attend and winning the Founders Cup certainly qualified them for winning the award.

This is a continuation of a tradition began years ago by the leaders of the organization.



Presentations and Announcements

Host Award - A recognition plaque was also presented to the Sigma Chapter for their hosting of the April 2003 national convention.



President's Award – President Jim Reynhout presented a special paperweight to Dr. Jim Hall for his three years of service in the national presidency.

Founders Cup Plaque – A plaque recognizing the Alpha Beta chapter as 2002 recipients of the Founders Cup was presented to chapter officers.

This is a permanent symbol of their accomplishment.

President Reynhout then passed the official gavel to Dr. Cary Guffey with the words “I hereby pass this gavel and the authority of the president to Dr. Cary Guffey.”

As the new president, Dr. Guffey extended thanks to all that attended. He also thanked the students of the Sigma Chapter for their work in hosting the meeting.

Coffee mugs were presented to all the paper presenters as well as chapter advisors.

Dr. Guffey announced the site of next year's convention to be Millikin University in Decatur IL. The Pi chapter will be host. April 1-3, 2004 is the tentative date for the meeting. The fall advisor's meeting will be the first week in November.



Dr. Cary Guffey (L) receives the official gavel from Dr. Jim Reynhout.



Chapters are reminded that students could publish their paper in the Sigma Zetan.

The meeting adjourned at 12:10 p.m.

Chapter Reports

Rho Chapter University of Indianapolis

AREA ONE: Local Activity

1) Local Meetings: The Rho Chapter inducted 21 new members in the fall of 2002. The chapter has monthly meetings from October through April with refreshments provided using chapter funds. These are conducted as business meetings to plan chapter activities. The officers meet to complete paperwork related to maintaining the chapter's Registered Student Organization (RSO) status. An officer is required to attend each of the meetings of the RSO committee of the university.

2) Local Activities: The chapter is primarily responsible for coordination of student volunteer activities for the Central Indiana Regional Science and Engineering Fair. This is the largest fair in Indiana serving Indianapolis and Marion County and the four contiguous counties in central Indiana hosting over 800 student projects and nearly 1000 students from grades 1-12 over three days. The officers participate on the Fair Planning Committee and attend monthly meetings of the committee during semester I and weekly meetings during semester II as the fair approaches in mid-March. The officers organize and supervise all student volunteers from committee setup to tear down. Members of the Rho Chapter judge for special awards given by the chapter for students in grades 1-8. In 2003, the chapter purchased tickets for admission to the Indianapolis Children's Museum as prizes for the Sigma Zeta Awards. The members also prepare and present chemistry demonstrations to entertain and stimulate students participating in the lower elementary division of the fair (grades 1-3).

This year, the chapter began a letter writing campaign to influence the Indiana State Legislature to officially recognize the importance of the scientific contributions of George Washington Carver to the state of Indiana and its soybean farmers.

The chapter has begun efforts to work with the Indianapolis Southeast Community Organization (SECO) to make science tutoring and demonstrations available to elementary students in the Indianapolis near southeast neighborhoods. The chapter is just beginning a campaign to support our nation's men and women serving in the military during Operation Iraqi Freedom. This will include writing letters to troops and sending personal items that will make their times away from home more comfortable.

4) Utilizing Outside Resources: The chapter sponsored a seminar for the campus community on the opportunities for scientists in general and physicists in particular in the United States Navy.

The chapter sponsored a trip for members to Mammoth Cave, Kentucky. While on the trip, the students took a tour of one section of the cave, learned about the cave's geology, and took an ecological tour of the surrounding park area.

5) Innovative Ideas: The chapter annually files budget and organization information with the university Office of Student Organizations to qualify as a Registered Student Organization. It is the only honor society on campus to earn this status. As a RSO, the chapter is eligible to receive funds from the student activity fee to subsidize chapter activities.

AREA TWO: National Activity

1) Attendance at National Convention: The Rho Chapter is sending three student representatives (chapter president and two presenters) to the National Convention for the first time in several years.

2) Paper Presentation at the National Convention: Two Rho Chapter members are presenting results of their research at the convention.

3) Cooperation with National Chapter: The chapter has communicated rosters of new members and new officer reports for 2002-03.

Respectfully Submitted,
Scott Cline, Rho Chapter President
Joe C. Burnell, Rho Chapter Faculty Advisor

Convention Photos

A special thanks to the Beta Lambda Chapter for providing photos.



Our Lady of The Lake University Campus



National Chapter Banner



The Alamo



Cattle Egret



Dinosaur Track



River Walk



Government
Canyon
Field Trip



Little Blue Heron



Muscovy Duck

River Walk

