

The Sigma Zetan

Volume LXX

2004

Proceedings of the National Convention
Millikin University
Decatur, Illinois



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All other photos courtesy of James Reinhout and Bob Kistler, Bethel
College (Beta Chapter).

The Sigma Zetan



Volume LXX

Cary Guffey, Editor
Our Lady of the Lake University
San Antonio, Texas

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Chapter Officers

2003-2004

Alpha Psi: Hillsdale College

President: Crystal Cornett
Vice President: Terah Malette
Secretary: Monique Gagnier
Treasurer: Benjamin Hooker
Advisors: Jim Peters
Reinhardt Zeller

Alpha Rho: Stonehill College

President: Kevin Semelrath
Vice President: Colleen Danielson
Advisor: Roger Denome

Beta Alpha: Lyndon State College

President: Jennifer Allan
Vice President: Joshua Smith
Secretary: Joshua Smith
Treasurer: Ilene Dickinson
Advisor: Kevin Farrell

Beta Beta: George Fox University

President: Melissa Workman
Vice President: Amara Sheppard
Secretary: Josalyn Bruce
Treasurer: Jeff Nelson
Advisors: Carlisle Chambers
Michael Everest

Beta Gamma: Columbia College

President: Tammy Annett
Vice President: Elizabeth DeWitt
Secretary: Elizabeth DeWitt
Treasurer: Elizabeth DeWitt
Advisor: Ken Torke

Beta Iota: Bethel College

President: Rebecca Gaalswyk
Vice President: Brent Kobielush
Secretary: Jessica Keller
Treasurer: Jason Draper
Advisors: James Reynhout
Ken Rohly

Beta Theta: Belhaven College

President: Jennifer Craft
Vice President: Samantha Morris
Secretary: Michelle Gundy
Treasurer: Josh Speed
Advisors: Al Chestnut
Phillip Kelly

Beta Xi: Pikeville College

President: Karrie Bilter
Vice President: Jessica Goble
Secretary: Carrie Crigger
Treasurer: Tiffany Curry
Advisor: Bernadine Cochran

Phi: Eureka College

President: Jamie Palmer
Vice President: Patty McGaughey
Secretary: Jenny Cordes
Treasurer: Jennifer Williams
Advisor: Shelly Lindsey

Rho: University of Indianapolis

President: Sarah Goodrich
Vice President: Bridgette Westfall
Secretary: Nicole Sweeney
Treasurer: Jessica Terstenyak
Kyle Antos (acting)
Advisor: Joe Burnell

Associate Chapter: Somerset Community College

President: Tim Poland
Vice President: Clinton LeFever
Secretary: Clinton Hayes
Advisors: Billy Dobbs
Shane Talbott

Abstracts of Student Papers

(no title)

Lindsay Ball

Campbellsville University

While working an internship at a county health department with an environmentalist, I became interested in septic systems and proper waste removal. Campbellsville University has an artificial wetland at Clay Hill Memorial Forest. This fairly new wetland contains 2 septic tanks, 4 rock lined treatment beds, various plants, plus other tanks and pumps. The waste water passes through the system and eventually makes its way back to the greenhouse and into the fish tank. The wetland provides education about water recycling. How well the wetland removed waste from the water throughout the system and before the fish swam in it piqued my interest. Water samples were taken and tests were performed. The tests results of pH, temperature, total suspended solids, CBOD, and ammonia show the efficiency of the wetland septic system. The results were compared to the state regulated numbers for Waste Water Treatment Plants.

(no title)

Sara Bowen

University of Indianapolis

Laboratory work is an important tool used in university chemistry courses. Organizing laboratory procedures to make certain they reinforce coursework and are manageable for the students is a much more complicated and time-consuming process than most students expect. This semester, environmental chemistry was added as a course at the University of Indianapolis. In an effort to improve the laboratory procedures as teaching methods, each exercise was tested. It was necessary to change many of the procedures to make them more effective with the lecture portion of the class and easier for the students to execute.

Oxygen Consumption in the Tadpole Shrimp *Triops longicaudatus*

McKinzie Cloyd
Millikin University

The purpose of this study was to look at the rate of oxygen consumption in the tadpole shrimp *Triops longicaudatus*. Oxygen consumption was measured each day throughout the lifespan of *Triops* using a Rank Oxygen Electrode. Animals were maintained in conditions specified in recent literature. Oxygen consumption was reported in $\mu\text{l O}_2/\text{mg/hr}$ and plotted against the total weight of the *Triops* in mg. An average consumption rate of $0.006 \mu\text{l O}_2/\text{mg/hr}$ was found to be in close agreement with other aquatic organisms. An inverse relationship was found between animal weight and oxygen consumption. The smaller larvae consumed more oxygen per unit weight than adults.

Comparison of Spermatozoa Membrane Fatty Acids Isolated from Blue Fox and Silver Fox with Reference to Cryogenic Buffer

Crystal Cornett
Hillsdale College

In Scandinavian countries, the blue fox (*Alopex lagopus*) is threatened with extinction. Consequently, captive-breeding programs are underway with the goal of reintroducing the blue fox into the Scandinavian countryside, utilizing artificial reproduction technologies. Cryogenic protocols have been developed for the storage of silver fox (*Vulpes vulpes*) spermatozoa. However, these same protocols and modifications of these protocols have failed to preserve spermatozoa collected from blue fox. Because the ability to cryogenically freeze spermatozoa has been linked to membrane composition, the plasma membrane composition of blue and silver fox spermatozoa was analyzed. Silver fox spermatozoa membranes have significantly higher levels of docosapentaenoic acid (22:5, n-3) as compared to blue fox spermatozoa. Blue fox spermatozoa membranes have significantly higher levels of linoleic acid (18:3, n-3) as compared to silver fox spermatozoa. Since artificial insemination protocols utilize a tris-fructose-citrate egg yolk buffer when cryopreserving sperm but an EDTA buffer with fresh sperm, the effects of storage buffer on spermatozoa membrane fatty acid composition was studied. Silver fox spermatozoa was unaffected by the storage buffer. However, blue fox spermatozoa membrane fatty acid composition was altered by tris-fructose-citrate buffer with egg yolk, promoting increased levels of docosahexaenoic acid (22:6, n-3).

**Survey of Ft. Daniel Conservation Area:
Year 1—Relationship Between Small Mammal Communities and
Habitats**

Year 2—Trap Placement Study and Mammal Survey

Sarah Creson

Millikin University

Surveys of flora and fauna are important to conservation districts, especially when trying to assess their biodiversity and when applying for federal grants. The Macon County Conservation District (MCCD), in central Illinois, has not conducted a small mammal survey since the 1970's. Therefore, my objective was to conduct a mammal survey for the MCCD at Ft. Daniel's Conservation Area. In addition, vegetation data was collected in order to relate small mammal communities with specific habitat features. The results indicated that mice were caught more frequently than shrews and voles. Furthermore, mice were significantly less abundant ($F=8.964$, $p=0.001$) in grassland habitats than in forest or other (combination of edges and creek sites). The vegetative data also supported these results, with mice being more abundant with increased canopy cover and fern presence. In the second year of the project, a study was conducted to analyze trap usage when trap placement was varied between the ground and debris/trees. The results showed no preference between the two trap placements, with individuals utilizing both placements within the same trapping site. Finally, over the two years various methods, including live trapping, track boxes, visual encounters, and plaster casts of tracks, were used to identify species utilizing the conservation area. Sixteen species were identified, ten of which were previously unverified for Macon County.

**A PHEX 3' UTR Point Mutation: A Cause of X-linked
Hypophosphatemic Rickets**

Selina A. Estwick

University of Indianapolis

X-linked hypophosphatemic rickets (XLH) is the most common form of hereditary rickets, which is characterized by the renal phosphate wasting. Previously there has been evidence that mutations that occur in the phosphate regulating gene, with homologies to endopeptidases on the X-chromosome (PHEX), lead to XLH. There have formerly been over 159 mutations reported in PHEX that include missense, frame shift, nonsense, and deletions. Upon DNA sequencing all 22 PHEX exons of 7 XLH patients a point substitution mutation was identified. Through allele specific PCR only the DNA of 7 XLH patients, tested against 400 control, were found to have the novel point mutation in the 3' untranslated region of PHEX. The implications and exact mutation will be discussed.

***Leishmania braziliensis*: Characterization of a Vital
Glycoconjugate**

Rebecca Gaalswyk

Bethel College

Leishmania is a protozoan parasite affecting millions of people worldwide with diseases from skin lesions to permanent disfigurement. If untreated, some forms can be lethal. Current treatments, however, are expensive and can result in serious side effects.

Leishmania braziliensis causes mucocutaneous leishmaniasis, which leaves permanent disfigurement of the mucous membranes. The parasite has two stages in its life cycle. They are promastigotes within the sand fly and amastigotes within the vertebrate host. The parasite is covered with a glycoconjugate shield that has been shown to change its structure during the different stages of the parasite's life cycle. The glycoconjugate, lipophosphoglycan (LPG), has been shown to be necessary for evasion of the vertebrate host's immune system. Carbohydrates from the repeating units and caps of the *L. braziliensis* LPG have been isolated and separated from the core/lipid anchor via acid hydrolysis followed by size exclusion chromatography. We have initially characterized these portions.

A Novel “Rearrangement” of Acyl Tetramates

Sarah Goodrich

University of Indianapolis

The observation of an apparent “rearrangement” of a tetramic acid starting material prompted further investigation into the chemistry of the reaction. The “rearrangement” is spoken of with quotations because there is no clear evidence that the hydroxyl group on the original molecule is the same as the one found on the “rearranged” product molecule. The chemistry behind this reaction is of interest because the “rearrangement” constitutes a novel observation, the tetramic acid starting material has been shown to have biological activity, and the core structure of the product is found in the Ascomycin family of natural products. The three goals of this project were to synthesize the tetramic acid starting material, to determine the optimum conditions for the novel “rearrangement”, and to isolate and characterize the “rearranged” product. Not only were these three goals accomplished, but proposed intermediates were also obtained, characterized, and shown to convert to product under the established reaction conditions.

The Role of gp93 in *Drosophila* Embryogenesis

Staci Hieronymus
Millikin University

In a previous study, 20-hydroxyecdysone (20-HOE) observations were made in which biochemical changes were seen in certain proteins, in addition to a stimulation in amount of gp93. 20-HOE takes action to cause modification which acts to alter protein localization from cytoplasmic to cell surface domains. Immunolocalization of gp93 using GAR AP 2° antibody labeling was carried out to determine the nature and function of the proteins on the cell surface. Cited examples of cell surface anomalies in conjunction with an acid homology search confirmed documentation of gp93 as a heat-shock protein chaperone molecule. The implications of this research could possibly help isolate and identify a subset of a class of HSP that could be used to understand previously misunderstood cellular processes at the cell surface for research involving a variety of organisms.

Analysis and Visualization of Protein Binding Using Mass Spectrometry

Anna L. Kenney
Bethel College

Mass spectrometry has long been used as an analysis tool for determining organic structures and sequencing proteins and other macromolecules. Using a matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometer to determine protein binding is an unfamiliar application of a familiar instrument. The protein binding of interest was between endopolygalacturonase (EPG) and the polygalacturonase inhibitor (PGIP). EPGs and the PGIPs were sampled from the fungi, bacteria, and plants. The proteins were allowed to bind and then incubated with pepsin. Since pepsin cleaves relatively non-specifically, in theory it should cleave everywhere except where the proteins are protected at the binding site. The digestion was analyzed using the MALDI-TOF. The resultant fragment peaks were compared to the theoretical fragments produced by the computer program PROWL. Upon analysis, the protected sites, i.e. the binding sites, could be visualized using the protein modeling program, RasMol. The protein models showed the specific binding sites if binding did indeed occur.

**The Potential for Cold Weather Photosynthesis of the Exotic
Invasive Teasel (*Dipsacus laciniatus*: Dipsacaceae)**

Karen Kuchar

Millikin University

Teasel (*Dipsacus laciniatus*; Dipsacaceae) is an invasive plant brought to the United States from Europe. Teasel is a monocarpic perennial that remains green and in rosette form over the winter. There have been numerous attempts to stop the spread of teasel, which is taking over along interstates and killing natural vegetation in prairies, pastures, no till agriculture, and natural areas. One control strategy is mowing, but it increases seed dispersal. Another control strategy is herbicides, which can cause damage to surrounding plants. The impact of herbicides can only be effective if the plant is actively photosynthesizing. Our study tested the photosynthetic rate of the teasel in warm and cold temperatures. We found that teasel had a positive mean photosynthetic rate in the warm temperatures compared to the negative photosynthetic rate in the cold. Our study does not support the potential for herbicide effectiveness on teasel in cold temperature, a time when other, surrounding plants may be dormant.

**The Effects of Fertilization and Time of Mowing on Regeneration
and Seed Production of *Dipsacus laciniatus* (Dipsicaceae).**

Megan Parrish and Heather Metzelaars

Millikin University

We studied the effects of fertilization and time of mowing on the regeneration of *Dipsacus laciniatus*, cut-leafed teasel, at the Mascoutin Recreation Area at Clinton Lake, Dewitt County, Illinois in 2002. *Dipsacus laciniatus* is an exotic European invasive species that is taking over natural habitats across the United States. We established 14 five-meter by five-meter plots, seven fertilized and seven unfertilized, which were then divided into seven cutting treatments, including no cutting and one of six mowing times from June 3rd to August 10th. Stem height, number of heads per individual plant, size of heads, number of seeds per head, and seed viability were measured. We found no significant difference between plant heights or number of heads per individual fertilized versus unfertilized plots. There were significant trends in date mowed and resultant time allotted for regrowth. If cutting occurred before July 1st, no significant difference was found between cut and uncut *D. laciniatus*. If cut after July 1st, then the weight, number of heads produced per plant, and number of viable seeds all decreased. Therefore it appears that mowing may be an effective control if performed in early July.

(S)-3-(4'-hydroxyphenyl)-2-methoxypropanoic Acid

Aaron M. Rund

Millikin University

For their potential health benefits, antioxidants are important targets of organic synthesis. This research reports progress toward the synthesis of (S)-3-(4'-hydroxyphenyl)-2-methoxypropanoic acid. It is part of a larger study involving the reaction of indium with benzylic halides. The key step in such syntheses involves an indium-promoted addition reaction in aqueous solution. The water solvent provides a safer reaction medium. Due to its compatibility with phenols, carboxylic acids, and water, an indium promoter necessitates fewer reactions steps. Therefore, the use of water and indium follows the initiatives of green chemistry.

Use of Alternate Carbon Sources in Citric Acid Fermentation by *Aspergillus niger*

Carrie Whelan

Millikin University

While citric acid is widely used in food, beverages, and pharmaceuticals, it has become increasingly more important for the industry to find ways to ferment acid without using very costly refined sugar. In this review, two experiments were studied, using cotton waste and fig as fermentation substrate. Both found that the alternate carbon sources were efficient substrates for good mycelium growth; neither was successful at producing high levels of citric acid. This is in agreement to other studies done on similar carbon sources, such as brewery waste, cornstarch, and other fruit extracts. Thus, the citric acid fermentation industry must currently rely on high levels of refined sugar to produce the highest concentrations of acid, while continuing to search for a more effective solution.

(no title)

Lynell Williams

Millikin University

(Abstract not submitted)

Photos from Student Presentations

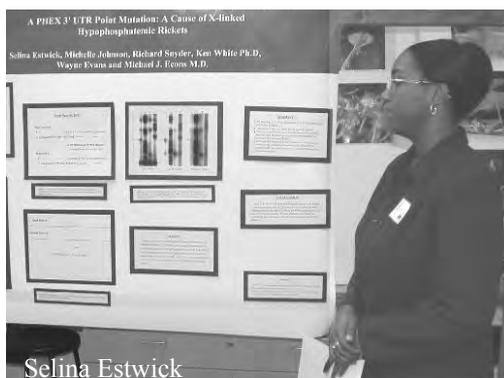


Karen Kuchar
Millikin University



Lindsay Ball
Campbellsville University

Crystal Cornett
Hillsdale College



Selina Estwick
University of Indianapolis



Aaron Rund
Millikin University

Proceedings of the National Convention

Minutes Thursday April 1, 2004 Executive Council Meeting

First Business meeting

Meeting Convened at 7:45 p.m. President Cary Guffey brought the meeting to order.

Roll Call

Officers: Harold Wilkinson (Executive Director), Jim Reynhout (Past President), Cary Guffey (President), Robb VanPutte (President Elect), Glenn McQuaide (Treasurer), and Bob Kistler (National Webmaster).
Chapter Representatives: Joe Burnell (Rho), Bernadine Cochran (Beta Xi), Jim Hall (Sigma), Conrad Toepfer (Pi), Brent Summers (Alpha Beta).

9 Chapters are in Attendance

Approval of Previous Minutes: Minutes for the convention March 27-29, 2003 at Our Lady of the Lake University were reviewed. Changes were made and minutes were approved.

Reports from National Officers

Harold Wilkinson, National Executive Director: A summary report of the past year was presented (pp. 15-16). Report was accepted by the group. Also presented to the group was a chart showing activity of the office since 1997 (p. 16). Of note was the significant increase in the number of new members in the last year.

Cary Guffey, President (Conducting): Thanked Millikin for their work on the convention and welcome to Eureka College, Phi chapter. Cary feels the state of organization is strong, based on renewed interests of less active chapters and inquiries from institutions wishing to establish chapter. Alpha Psi chapter is joining us this year after a vacation of a few years. He suggested talking to the chapters who have begun coming in recent years and see if there are reasons that could be exploited for use in getting other chapters to attend.

(continued p. 17)

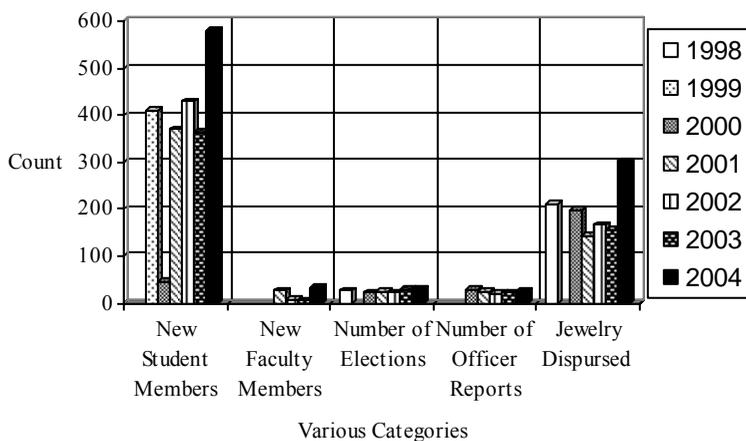
National Office Activity Report
30-March-2003 to 15-March-2004

Chapter Name	New Student Memberships	New Faculty Sponsors	Dues Received	Date of Last Election Report	Officers Report Received	Pins & Medallions Dispersed
Beta	8		\$200	5/1/03	03-04	
Gamma			\$0			
Delta			\$0			
Epsilon			\$0			
Lambda			\$0	10/8/02	02-03	
Mu			\$0			
Xi			\$0		98-99	
Pi	22	1	\$550	11/20/03	02-03	23
Rho	25		\$625	10/5/03	03-04	
Sigma	7		\$175	2/12/03	02-03	
Tau			\$0			
Upsilon	8		\$200	2/12/04	03-04	
Phi	14	1	\$350	2/26/04	03-04	31
Chi			\$0			
Psi			\$0			
Alpha Beta	4		\$100	11/3//03	03-04	
Alpha Gamma	8	2	\$200	11/25/03	03-04	
Alpha Delta			\$0			
Alpha Epsilon			\$0			
Alpha Zeta			\$0			
Alpha Eta			\$0			
Alpha Theta	11		\$275	4/10/03	03-04	8
Alpha Kappa	37		\$925	10/9/03	00-01	
Alpha Lambda			\$0			
Alpha Mu	12		\$300	3/16/03	01-02	
Alpha Nu	3		\$75	6/26/03	03-04	5
Alpha Xi	13		\$325	5/16/03	03-04	
Alpha Pi			\$0	4/25/00	00-01	
Alpha Rho			\$0	11/14/01	03-04	
Alpha Sigma	8		\$200	3/31/03	01-02	8
Alpha Tau			\$0			
Alpha Upsilon			\$0	2/25/02	03-04	
Alpha Phi	33		\$825	2/19/03	00-01	
Alpha Chi			\$0	2/24/01	00-01	
Alpha Psi	31		\$775	12/2/03	03-04	39
Alpha Omega			\$0			

National Office Activity Report (continued)
30-March-2003 to 15-March-2004

Chapter Name	New Student Memberships	New Faculty Sponsors	Dues Received	Date of Last Election Report	Officers Report Received	Pins & Medallions Dispersed
Beta Alpha	9		\$225	5/1/03	03-04	
Beta Beta	8		\$200	2/16/04	03-04	
Beta Gamma	4		\$100	2/17/04	03-04	
Beta Delta	12	1	\$300	10/5/03		15
Beta Epsilon			\$0	4/27/00		
Beta Zeta	18	3	\$450	4/24/03	01-02	
Beta Eta			\$0			
Beta Theta	6		\$150	4/28/03	00-01	
Beta Iota	54		\$1,350	11/12/03	03-04	
Beta Kappa			\$0			
Beta Lambda	76		\$1,900	12/2/03	03-04	
Beta Mu	15		\$375	5/1/03	01-02	15
Beta Nu	34		\$850	3/13/03	02-03	35
Beta Xi	18	1	\$450	10/23/03	03-04	18
Beta Omicron	27	2	\$675	11/14/03	00-01	54
Beta Pi	47	22	\$1,175	3/23/04	03-04	47
Somerset (Associate)	7		\$175	2/24/04	03-04	4
# of Chapters	30	8	\$0	36	35	13
Total	579	33	\$14,475			302

Office Activity Chart 1998-2004



One area of concern this year is the low number of presentations. Timing of the convention may be problem as it sometimes conflicts with the MCAT exam. It was proposed that we discuss this issue at the next advisors meeting. What about the end of April? Perhaps an award to recognize the best presentation could be motivating. There was concern as to how to judicate this. Poster sessions are a good idea. Not as much pressure. The national officer and advisor meeting was very beneficial. It was suggested that it be at end of January or first week in February.

President's Report

I would like to express my appreciation to Millikin University, Dr. Harold Wilkinson, Dr. Conrad Toepfer, and the student members of Pi chapter for their hospitality and for the efforts that they have made to make this year's convention a great success. I would also like to welcome those advisors who are new to the National Convention—I look forward to your input and hope that the experience here is such that you will want to join us again. And finally, a warm welcome to those of you who have attended recent conventions and meetings—I thank you for your efforts on behalf of the organization.

The state of the national organization is strong. My optimism stems from what appears to be a renewed interest in Sigma Zeta both from local chapters and institutions looking to establish new chapters. In the past year there have been at least two inquiries about establishing chapters on new campuses, one of which has come to fruition (the University of Arkansas at Monticello). Furthermore, we continue to have participation at the National Convention from chapters that have not attended previously—last year Beta Xi chapter (Pikeville College) attended for the first time and this year Phi chapter (Eureka College from Eureka, Illinois). Jim Hall, advisor of Sigma chapter (Our Lady of the Lake University) has suggested that we talk to the advisors of these chapters to determine what led them to attend so that we can use that information to further recruit other local chapters. It is my intention to devote some time to such recruiting while serving as Past President during the upcoming year.

One area of concern that I have is with the number of student presentations at recent meetings. Just a few years ago it was necessary to run concurrent sessions on both Friday and Saturday to accommodate all of the oral presentations. In the last couple of years, however, it has been difficult to get enough student speakers to fill the time slots of both of those days. I suggest that advisors discuss among ourselves and with our student members ways in which we might encourage students to take advantage of this opportunity. On the national level, we might want to consider an award for best presentation or some other type of recognition for student presenters.

A productive meeting of national officers and chapter advisors was held in February, 2004, hosted by McKendree College and Dr. Robb Van Putte. Good suggestions were made regarding the national website, handling of financial documents, and possible revisions to the constitution. Furthermore, we discussed the value of sending letters of acknowledgment to the deans, provosts, or other pertinent administrators at local chapters emphasizing the amount of work required to be an advisor for a local chapter. Because this was such a productive meeting, I suggest that every effort be made to schedule another advisor's meeting to be held in fall 2004.

Respectfully submitted for consideration and approval,
Cary Guffey, President
1 April 2004

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

1. The main change to the website has been to insert site maps on the front page.
2. *Sigma Zeta* is now on-line including the 2003 issue. It is linked from the "About Sigma Zeta" link on the home page (<http://www.sigmazeta.org/info/history.html>).
3. The scrapbooks up to 1992 are digitized and available as a PDF. They are not currently searchable. Cary was requested to get the actual scrapbook and scan each page as TIFF or JPG if possible.
4. Images of jewelry have been updated and are on-line. Jewelry now includes both safety pin and tie-tack backs in both gold and silver.
5. The new list serve is getting more traffic due to convention. Administrator block has been removed so members can post announcements without permission.
6. The membership information page is now linked to the front page of the web page allowing one to go to the send a message or to subscribe to the list. The list being managed by Curt Grafton has been removed and is no longer available. Bob will check to make sure it has been removed.
7. We may want to rethink a standardized submission process for the convention and the report of election for chapter initiates.

Motion – To accept the Webmaster report. Seconded and passed.

Webmaster's Report

1. The major change on the web site was the addition of a map of main links as a menu to the home page, <http://sigmazeta.org>.
2. The *Sigma Zeta* is now online from 1929 – 2003 and is linked from the "About Sigma Zeta" link on the home page and from the new home page menu (<http://www.sigmazeta.org/sigmazetan/index.html>).

3. The scrapbooks, digitized by Bob Moffitt have been placed into annual or grouped pdf files linked from the new home page menu and also from the history page linked from the About Sigma Zeta menu (<http://sigmazeta.org/archive/scrapbooks.html>).
4. The new pins and medallions are featured from a link on the Membership page and also linked from the new home page menu (<http://sigmazeta.org/members/jewelry.html>).
5. The new list serve is getting more use, but mainly for convention information. The list is now available as a link on the new home page menu of the web site. I recently removed the "moderator approval" step from the message process so that messages from list members automatically are sent to the entire list.
6. The membership information page (<http://lists.bethel.edu/mailman/listinfo/sigmazeta>) allows any Chapter officer or advisor to subscribe to the list and after being subscribed to send messages to the list <sigmazeta@lists.bethel.edu>.
7. Last year a web form for submission of abstracts and meeting registration was developed. The form was not used this year. I would like to see this on-line form used so that the registration and abstract submission process is uniform from year to year. Although the form will need to be modified slightly each year to meet the needs of the host institution, a standardized submission process becomes more possible, eliminating the need to recreate new materials every year and the confusion for those that need to submit registrations and abstracts (<http://www.bethel.edu/college/dept/biology/StudentOrganizations/SigmaZeta/Forms/SZAbstract03.html>).
8. Visions
 - A. Make the site more "active" to attract more consistent visits
 - B. Feature on awards and award recipients
 - C. Chapter of the Month
 - D. Ideas for activities
9. Other
 - A. Get more recent historical archive files onto the web site
 - B. Get the most recent constitution and history updates onto the site
 - C. Develop online forms for submission of reports, pin orders etc.

Other?
 (submitted by Bob Kistler, 1 April 2004)

Glenn McQuaide, National Treasurer: A copy of financial activity from April 2002 to July 1, 2003 was circulated (pp. 22--23). We are in good financial shape with a current balance of \$30,538.34. We started the 2002-2003 fiscal year with 8038.61. There are accounts in Union Planters Bank, which include a savings, and long-term development account, which as of June 30, 2003 totaled \$25,061.35. The Columbia checking account contains \$3,063 as of April 1, 2004. The Millikin balance as of March 8, 2004 was \$18,034. Future reports will include the annual fiscal year report and a partial report from July 1 of this fiscal year to the time of the convention. We are still taking in slightly more than we spend annually.

Glenn was asked to prepare future reports with more detail regarding expenses and receipts. These could be grouped into general categories such as officer travel, jewelry etc.

There are currently the following accounts: Millikin account, Union Planter Bank Savings, UP certificate of deposit, Columbia Bank checking account, Visa Credit card account. A general list of recommendations for conducting the annual audit was submitted for approval (see below). It was felt that the procedure needed to be simple but complete.

Motion – To accept the treasurer’s report. Seconded and passed.

Guidelines for Auditing Procedures

Items needed for Audit

- Check book from Campbellsville bank
- Bank statements
- Cancelled checks
- Paid bills
- Accounting statement from Millikin account
- Transaction paperwork for Millikin account
- Union Planter saving quarterly statements
- Certificates of deposit
- Credit Card monthly statements for the period in question

I. Millikin Account

1. Using the printout of transactions from the business office, randomly select several hard copies and see if they show up on the printout.
2. Randomly check to see that three pieces of paper exist for each transaction: national office copy, secretary copy, and business office copy.
3. Check several hard copies to see that the Millikin business office has produced a record of the transactions.
4. Check to see that expenses paid from this account are for valid expenses and that there is a receipt for the transaction.

II. Columbia Bank Account

1. Verify arithmetic on checks and deposits.
2. Randomly select returned checks and compare them with deposit slips or checkbook ledger to verify they have been entered.
3. Compare checking account balance with ledger for possible discrepancies.
4. Find a few withdrawals from the Millikin Account and verify that they were deposited into the Campbellsville account.
5. Randomly select bills from the bill file and verify that a check was written to cover the expense.
6. Check to see that a regular balancing procedure was carried out by the treasurer.

III. Union Planters Saving Account

1. Examine all monthly account statements for withdrawals or deposits. Verify where these funds came from or went to as being reputable.
2. Check the balance in the account, determine if interest has been added into the account correctly.

IV. Certificates of Deposit

1. Check the date the deposit was initiated and verify the due date has not changed.
2. Determine how much money is invested in Certificates of Deposit.
3. Verify that this amount has not changed from previous years without documentation.

V. Credit Card

1. Check the monthly statements to determine if purchases are valid expenses for the organization.
2. Check the Millikin account or Campbellsville to see if bills were paid and in a timely fashion; i.e. no late charges incurred.

Robb VanPutte, President-elect: As a follow-up to an assignment accepted by Robb at the advisor's meeting, he proceeded to check on the status of the Gamma Chapter at Virginia Commonwealth University. The chapter has always been a part of the School of Pharmacy, a professional school. VCU students are not traditional. Further contact with the associate dean of affairs and the head of the department of Pharmacy proved to be fruitless. The chapter has been in existence since 1927. School does not have traditional undergraduate program.

Robb then checked with biology department and no one had heard of the organization. Possibility to re-activate was suggested to the head of the department. The department head agreed to see what could be done. Robb will follow-up. It was felt that since there was no honor society on campus it could be an arguing factor for setting up Sigma Zeta. It is Robb's position that the Gamma chapter is inactive in the school of Pharmacy and that effort to move it to the School of Arts and Science should be considered.

(continued p. 24)

Financial Report for Sigma Zeta National

**Millikin University Account Balance
April 1, 2002- June 30, 2002**

	Union Planters	25,000.00
Balance Forwarded April 1, 2002	Millikin	13,455.98
Deposits		
	4/9/02	1,000.00
	4/9/02	256.00
	4/23/02	801.00
	4/30/02	172.00
	4/9/02	1,000.00
	6/14/02	375.00
Total Deposits 4/02-06/02	Millikin	3,604.00
Disbursements		
	4/2/02	37.33
	4/2/02	20.30
	4/8/02	112.60
	4/10/02	626.75
	4/11/02	29.61
	4/11/02	1,000.00
	4/11/02	1,000.00
	4/15/02	10,000.00
	4/30/02	15.45
	4/30/02	53.64
	5/2/02	5.00
	5/14/02	30.90
	6/3/02	8.59
	6/10/02	0.36
	6/30/02	1,000.00
	6/30/02	5.67
Total Disbursements 04/02-06/02	Millikin	13,946.20

**First National Bank (Columbia) Balance
April 1, 2002–June 30, 2002**

Balance Established April 17, 2002		10,000.00
Total Deposits 4/02-6/02		0.00
Disbursements		
#0001:4/29/02 Bob Moffitt	456.90	
#0002:5/10/02 Bob Moffitt	539.27	
#0003:6/11/02 Harold Wilkinson	4,079.00	
Total Disbursements	FNB Columbia 5,075.17	
Balance June 30, 2002		
	FNB Columbia	4,924.83
Balance June 30, 2002		
	Millikin	3,113.78
	FNB Columbia	4,924.83
	Develop	25,000.00
Total		33,038.61

July 1, 2002–June 30, 2003

Balance Forwarded July 1, 2002		8,038.61
Income		
Deposits-Millikin	13,404.40	
Deposits-Columbia	8,810.00	
Total Income	22,214.40	
Disbursements		
Millikin	9,370.04	
Columbia	7,344.63	
Total Disbursements	16,714.67	
Balance June 30, 2003		13,538.34
Development Fund Investment		
Long-term CD	15,000.00	
Conventional Savings Account	10,000.00	
Interest for 2002	61.35	
Total	25,061.35	

Can we transfer the Gamma chapter to department of biology or school of arts and science? We discussed the idea of transferring the chapter and concluded that there was nothing stopping us from making a transfer since the chapter was not actually changing universities. There is a folder of communication between Thomas Karnes at the School of Pharmacy and Harold that he will give to Robb.

Motion – To accept the past president’s report. Seconded and passed.

President-elect’s Report

My efforts this year have centered around learning the duties and responsibilities of National President. This has been accomplished mostly through communication with Harold as well as familiarizing myself with our national constitution and by-laws.

Additionally, at the chapter advisor’s meeting held on February 7th, 2004, I accepted the charge of contacting Virginia Commonwealth University’s School of Pharmacy located in Richmond, VA, in order to inquire about the status of the Gamma chapter. I first contacted the Dean of the School of Pharmacy, Dr. Victor A. Yanchick. He informed me that his office had no knowledge that a chapter of Sigma Zeta exists at the school. He suggested I contact Dr. Ron Polk, Head of the Department of Pharmacy. When I spoke with Dr. Polk, he also informed me that while he is a long-time faculty member, he has no knowledge of Sigma Zeta or any local activity by the chapter. When I asked him about the pharmacy program, I was surprised to learn the School of Pharmacy awards only a professional degree in pharmacy. This, apparently, has always been the case. They, in essence, are not in the business of undergraduate education. In fact, most of their students already have a bachelor’s degree in biology or chemistry. When I informed him that Sigma Zeta is an honor society in science and mathematics for undergraduates, he was surprised to learn about the chapter existing within the School of Pharmacy. Apparently, VCU was created from an amalgamation of a number of smaller colleges or universities around the area in the mid-1950s. Perhaps it was during this transition when the chapter became inactive. The Dean’s office also suggested I contact the Associate Dean of Student Affairs, Dr. Tom Reinders. My efforts so far to reach Dr. Reinders have been unsuccessful.

Next, I contacted the head of the biology department at VCU, Dr. Leonard A. Smock. He informed me that in his 14 years of serving as department chair he has never heard of any activities associated with Sigma Zeta. He did mention that the department of biology has a pre-pharmacy program that basically consists of biology and chemistry majors, but again, he has never heard any mention of Sigma Zeta. He did give me the name of the Coordinator for the Pre-Health Sciences Programs, Seth Leibowitz. When I spoke with Mr. Leibowitz, again he had never heard of Sigma Zeta or any activity associated with the local chapter. In an effort to try to reactivate the chapter, he suggested I might contact the head of the honors program at the college. Academically speaking, this might provide the correct pool of students from which the local chapter might be reactivated.

Finally, I did ask Dr. Smock about whether any connections exist between the department of biology and the School of Pharmacy. He said those that do exist are only of a research-oriented nature. I did ask if there might be interest in reactivating the chapter within the biology department. He said he would certainly pass around the idea to both students and faculty within the department. When asked whether an academic honor society currently exists in the biology department, Dr. Smock replied that he was not aware of one. It would certainly be prudent to follow up on this in the near future.

Based on all of this information, it is my belief that the Gamma chapter is no longer active. It is apparent that the educational mission of the school today is very different from what it was back in 1927 when the chapter was first initiated. Sigma Zeta is an honor society for undergraduates in science and mathematics and, therefore, doesn't appear to be a good fit for students in the School of Pharmacy. It is my opinion that if the chapter is to be reactivated, this should come from speaking with faculty and students within the department of biology at VCU.

Respectfully submitted,
Robb VanPutte, President-elect
1 April 2004

Cary Guffey, Historian & Publicist: We have one new chapter in the organization. Total count is 52 with a number of less active chapters on the books. Cary discussed the Waggoner cup of the Beta Chapter. It was a cup established to honor Edward B. Waggoner and was awarded to the person writing the best essay. This is potentially a significant historical event for the chapter. Many chapters might have historical items that would be worth including in national history as well as chapter history. Cary agreed to research traditions that may have historical significance and make them available to other chapters. Would give to students.

Guffey reported on receiving the publication hardware from Bob Moffett and that he planned to get it in working order over the summer. He desires to get the online Sigma Zetan in a form that one could do searches of topics in past issues. He also suggested that the annual reports of the publicist and editor be consolidated for annual purposes. It was suggested that scrapbooks be made more public either by bringing them to the meeting or putting page samples on the website.

Motion — To accept, was seconded and passed.

Historian's Report

The list of chapters active and retired is updated as follows. The University of Arkansas at Monticello was newly chartered as the Beta Pi chapter with an induction ceremony held this past March.

The value of the national website for conducting historical research on the organization and its chapters was made apparent at the recent national advisor's meeting. This meeting was held at McKendree College, and in the room in which we held our meeting it was noticed that a large cup was inscribed with the names of winners of the Sigma Zeta Waggoner Cup Award. Names on the cup were listed from the 1930s through the 1950s. Robb van Putte, the Beta chapter advisor and national President-Elect, had no knowledge of what this award represented nor whom it honored. After the meeting, I went to the national website and looked at *Sigma Zetans* for the time period encompassed by the dates inscribed on the cup. A chapter report was found from 1937 that mentions the establishment of this award to honor Dr. Edward B. Waggoner, Emeritus Professor of Natural Sciences at McKendree College, and the report describes what criteria students had to meet to receive the award. The details of this can be found on p. 5 in volume 8 (1937) of the *Sigma Zetan*.

It is my intention to highlight such historical information from chapter reports of earlier conventions at future National Conventions. I encourage chapter advisors to make me aware of any plaques, cups, or other awards that may have been given to their students and since discontinued, and about which there may be mention in previous *Sigma Zetans*. Furthermore, if you anyone has suggestions on persons of note (advisors, students who have gone on to distinguished careers in their field, etc.) who likely attended previous conventions, please let me know and I can research them as well. Once the scanned images of the *Sigma Zetan* are converted to text files (see Publicist's Report), such research should be able to be conducted rather efficiently.

Respectfully submitted for consideration and approval,
Cary Guffey, Historian
1 April 2004

Publicist's Report

The national website continues to be a source of useful information for chapters and members. It once again proved valuable for those chapters attending this year's convention because it served as a convenient location for finding information on lodging in the Decatur, Illinois area, meeting locations, and the itinerary.

At the national advisor's meeting in February a number of suggestions were made about how the website could be made even more useful to chapters and to reduce the amount of paper being sent to the Executive Director. In particular, it was thought that many of the forms that chapters have to submit annually could be done so electronically from links on the website.

I have recently received from Bob Moffitt the last of the computer hardware necessary for publishing the *Sigma Zetan* and scanning in records and historical documents. It is my goal to receive all of the information from this year's convention in sufficient time so that the 2004 *Sigma Zetan* can be printed by the end of May 2004.

In last year's report from the Publicist, it was suggested that previously scanned documents be converted from image files to text files using optical character reading (OCR) software so that these documents can be searched for specific text strings (e.g., members' names, universities, chapters). Doing so would greatly enhance the value of these scanned documents as historical records. (An example of how the website can be used for historical research can be found in the Historian's report.) I intend to begin work on this project in the summer of 2004.

Finally, I propose that future reports from the Historian and Publicist be combined into a single report. The rationale for this proposal is that (1) the offices of Historian and Publicist are held by one individual (at the suggestion of the national officers) and (2) the reports of these two offices overlap in their content to some degree. If this proposal is approved it would reduce the amount of work required of the Publicist/Historian by eliminating redundancy and should limit the need to cross-reference multiple reports from officers (such as occurs above in this report).

Respectfully submitted for consideration and approval,
Cary Guffey, Publicist
1 April 2004

James Reinhout, Past President: Jim reported on an assignment made at the advisor's meeting to compose a letter to the administrators at the universities where we have established chapters. The intent of the letter is to try to get their help in reactivating chapters; He passed out a copy of the letter and requested that members of the executive council review it before it was finally sent out. The letter will be sent some time in the near future.

A discussion by Bob and Jim on the way to the meeting revealed that the people in environmental studies do not appear to have an avenue for presenting papers. Perhaps Sigma Zeta could be that avenue. We should be looking into such areas of study.

Past President's Report

Since the last convention, I have been spending most of my attention trying to encourage colleagues at the nearby Northwestern College to consider establishing a local chapter. We invited them to our fall banquet and had two students and a faculty member that took us up on the offer. We also invited them to join us at this convention, but they were not able to do so.

Secondly, I attended the winter advisor's meeting along with Dr. Robert Kistler, our webmaster. I believe I have had the most consistent attendance at these meetings of all of the advisors with the exception of Harold Wilkinson, our Executive Director. At that meeting I volunteered to contact all current chapters, writing a letter to each institution's current or last designated advisors, deans and provosts. A draft of that letter is being brought to this meeting for feedback and review. I intend to send it out as soon as it is in good order.

Thirdly, I have worked in our own chapter to try and maintain a high degree of interest and participation in the local chapter activities. Our chapter is presenting a founder's cup application this year in lieu of increased activity.

Finally, I have brought Dr Kistler and six students with me to the current meeting, and two of our students will be presenting papers.

(submitted by James Reynhout, 1 April 2004)

Old Business - None at this time

New Business

Convention Report /Host Chapter – Conrad Toepfer There are currently 42 registered from 9 schools. This does not include those participating from Millikin. There are 7 presentations from other campuses and 8 from Millikin. Field trips are ready and will be conducted to Rock Springs Environmental Center and ADM Hydroponics.

Committee Assignments - Forms were distributed for sign-up of students for the following committees: Founder's 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

Robb VanPutte, Beta (Chair)
Johnathon Morgan, Beta
Tonya Milam, Beta Xi
Karrie Biliter, Beta Xi
Shelly Lindsey, Phi
Sara Bowen, Rho
Bertha Mendoza, Sigma

Nominations

Jim Hall, Sigma (Chair)
Sara Reid, Alpha Beta
Krystal Goodwin, Beta
Elaine Faëssler, Beta Iota
Matt Brown, Pi
Selina Estwick, Rho
Cynthia Sanchez, Sigma

Auditing

Joe Burnell, Rho (Chair)
 Julie Davenport, Alpha Beta
 Crystal Cornett, Alpha Psi
 Brett Einerson, Beta Iota
 Robert Kistler, Beta Iota
 Beth Bauer, Pi
 Mike Everson, Rho

Resolutions

Jim Reynhout, Beta Iota (Chair)
 Ryan Singerman, Alpha Beta
 Natalie Johnson, Beta Iota
 Samantha Madlem, Pi
 Megan Messmore, Pi
 Sarah Goodrich, Rho
 Jackie Muñoz, Sigma

Handbook Committee

Brent Summers, Alpha Beta (Chair)
 Jessica Keller, Beta Iota
 Hank Mullins, Beta Xi
 Lynell Williams, Pi
 Kyle Antos, Rho

Honor Award

Harold Wilkinson, Pi
 Cary Guffey, Sigma

Mileage Reimbursement - Glenn circulated forms to be filled out by each chapter. Reimbursement is for \$0.30 per mile point to point.

Identification Card – Temp Badge Company has a way to make a card that could be included with the certificate. It shows an air of professionalism to give a card. Most organizations have one. Cost would be minimal to produce. Time of production could be an issue. Harold will look into current costs and possibly buy plastic cards or buy a laminator to do in house.

Officer/Advisors Planning Meeting - Will be held in late January or early February. Plans are to distribute the constitution and do serious review. Meetings will begin at 1:00 p.m. on Saturday to be determined. 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. We need to try to hold the meeting at a chapter that is less active. Harold will check on active chapters and find one that is close to a large city.

Environmental Studies Question - Should we make a change in the constitution? After discussion it was felt a constitutional change was not needed. It was felt that we needed to expand the information in the *Introducing you to Sigma Zeta* pamphlet to include this area of study. Should it be environmental science or environmental studies? We need to improve publicity to let these groups know they could qualify.

Future Convention Sites - Year 2005 - Malone College, 2006 - McKendree, 2007 - Campbellsville.

Opening Session

Friday April 2, 2004

The day began at 8:00 a.m. with members meeting in the Leighty Tabor Science Center, room 1 for a continental breakfast. At 8:45 a.m. Dr. Cary Guffey opened the 2nd Business meeting with the Historic Gavel. Fifty-two students and faculty sponsors were present. He welcomed the members of Sigma Zeta to the conference. He then introduced Conrad Toepfer, host chapter representative, to make announcements.

Dr. Toepfer welcomed the members and introduced Doug Zemke, President of Millikin University. Dr. Zemke talked about Millikin and its beginnings, and about the Decatur community. He praised the students for their efforts in science.

Dr. Guffey introduced the national officers and gave them a chance to deliver a brief message. The national officers included: Harold Wilkinson, National Executive Director; Robb VanPutte, President-elect; Cary Guffey, President and Publicist/Historian; Jim Reynhout, Past President; Glenn McQuaide, Treasurer; and Bob Kistler, Webmaster. He then announced the committee assignments (See Thursday minutes for details) and room assignments. The general meeting was adjourned to allow committees to meet and make plans for completing their responsibilities. Committees were instructed to meet as needed beyond this initial time to finish their work.

During the time the committees were meeting, 9:00-9:30, members not assigned to committees were able to attend the poster presentations in LTSC, room 213. Seven individuals presented their research (see abstracts for details).

From 9:30 to 11:10 oral presentations were presented in LTSC, room 1. There were five 20-minute presentations on topics in biology (see abstracts for details).

Field Trips

Following a casual boxed lunch provided in Room 115 of LTSC the group divided up to attend the field trips. Destinations included: (1) Archer Daniels Midland manufacturing plant where those attending were able to tour the hydroponics section of the plant and see how carbon dioxide and other byproducts of the grain processing are used to the fullest extent. (2) Rock Springs Environmental Center where attendees were able to see how Macon County is teaching about conservation and effective use of the environment. The center includes a restored 1860s prairie farm, a visitors center, museum, a lookout tower, fishing ponds, hiking, biking, cross-country skiing, naturalist-led programs, team-trust courses and a picnic area.

Friday Banquet Session

The banquet began at approximately 7:15 p.m. at the fellowship hall of Westminster Church near the Millikin campus. Dr. Cary Guffey officially greeted the 68 members and guests in attendance. Dr. Harold Wilkinson offered a blessing on the food. A buffet menu included chicken, vegetables, tossed salad and desert. An added desert of cake was available to celebrate the birthday of Dr. Wilkinson.

Dr. Robert Wiedenmann was the guest speaker after the banquet. He is from the Center for Economic Entomology, Illinois Natural History Survey, University of Illinois. His talk was entitled "The Siege of Invasive Species in the Midwest". He talked about the cost of invasive species of which there are plants, animals, and insects. Aquatic pathways opened invasion from lakes to rivers and vice versa.

Announcements

Dr. Toepfer announced that breakfast would be at 8:00, followed by committee work until 9:40. For those not on a committee, members of Pi chapter provided guided tours of the campus. Talks were scheduled to begin at 9:30 on Saturday morning. Following the speaker, participants had the opportunity to go to the observatory for a special presentation and to look through several telescopes, including a 20-inch model.

Honor Award Presentations

The following students were presented Honor Awards. Dr. Harold Wilkinson read the petitions and President Guffey presented the awards.

Sarah Creson

Pi Chapter

Millikin University

The Pi Chapter of Sigma Zeta at Millikin University is proud to nominate Sarah Creson for the Sigma Zeta Honor Award. Sarah is a senior biology major and a Millikin University Presidential Scholar. She has been a member of Sigma Zeta for three years and is the current chapter Treasurer. Sarah has excelled both academically and as a campus leader. She has been the recipient of two Summer Undergraduate Research Fellowships and obtained data that will be added to a revision of the *Field Guide of Illinois Mammals*. She has presented her research at numerous academic meetings and to several community groups. In addition, she has been active in the University Center Board, served as a Freshmen Orientation Leader, served as a teaching assistant in several courses, was a goalkeeper for four years on the Millikin women's soccer team, and has been active in many other groups on campus. Most recently, Sarah has contributed an incredible amount of time and energy in organizing the

Sigma Zeta National Convention. Sarah will be attending dental school at University of Missouri at Kansas City with plans of becoming a pediatric dentist. She is likely to be just as successful outside Millikin University as she has been in the last few years at Millikin. The Pi Chapter thanks her for her extraordinary efforts and wishes her well in the future.

*Crystal Lynn Cornett
Alpha Psi Chapter
Hillsdale College*

The Alpha Psi chapter of Sigma Zeta nominates Crystal Lynn Cornett for the Sigma Zeta Honor Award. As President, Crystal has revitalized the local chapter. She led the changing of our local constitution to increase student participation. She organized a very informative field trip to a local university for Sigma Zeta members to view a research greenhouse, insect collection, and science museum. Crystal led the local chapter to induct the largest number of students into membership that we have had for a long time. She has been effective in leading the local group. For example, she had us prepare cards for residents of a senior center, organized a tee-shirt dyeing activity in the chemistry department, and is organizing an end-of-year picnic that we have not had for a long time. Academically Crystal is a top student with majors in chemistry and biology, excelling in all subjects, and currently ranks third in her class of 305 students. She has presented biology papers at Argonne, at the Michigan Academy of Science, and at this convention. She is the coauthor of a paper presented at an international biology symposium. She has been very active in five honor societies, many other organizations, and has received eight scholarships and awards. We are proud to nominate Crystal Cornett for the Sigma Zeta Honor Award.

*Sarah K. Goodrich
Rho Chapter
University of Indianapolis*

The University of Indianapolis Rho Chapter of Sigma Zeta would like to nominate Sarah K. Goodrich for the 2004 Chapter Honor Award. Sarah is the 2003-04 president of the Rho Chapter, and under her leadership the Rho Chapter has continued its effort to lobby the Indiana State Legislature to officially recognize the scientific contributions of George Washington Carver and coordinated student volunteer efforts during the university's hosting of the 2004 Central Indiana Regional Science and Engineering Fair. Sarah also is active in the Math Club and helped bring the two groups together to host a seminar by Dr. Carl Cowen, former chair of the Mathematics Department of Purdue University to talk about applications of mathematics across the sciences. Sarah also has worked as an intern at Dow Agro Sciences LLC, and her presentation at the Sigma Zeta National Meeting is a result of that work. Sarah has accumulated a perfect 4.00 grade point average and has been accepted to the 2004 entering medical class of the Indiana University School of Medicine.

*Rebecca Gaalswyk
Beta Iota Chapter
Bethel College*

The Beta Iota Chapter at Bethel College is pleased to be able to recommend our student President, Rebecca Gaalswyk, for the Honor Award. Rebecca has been a member of Sigma Zeta since her sophomore year. She was one of three Bethel students who attended the National Convention last year at Our Lady of the Lake University in San Antonio. She was energized by the possibilities that Sigma Zeta presented to all students in the sciences for both fellowship and academic enrichment. Her enthusiasm led to a run for office and her selection as chapter President. In this position she has worked diligently and judiciously in helping to plan and carry out the ideas, programs, and functions of our chapter.

Rebecca is a double major in Biochemistry/Molecular Biology and Chemistry. Her current GPA is 3.53. Last year she began a research project on characterization of glycoconjugates in *Leishmania* and reported her preliminary findings to the chemistry faculty and majors at the end of the year. She has continued this project this year and will be reporting on her results at this convention. Rebecca anticipates looking for a position in a chemical industrial setting upon graduation. We have benefited by her good work and wish to recognize her for the excellent contributions she has made for our chapter and organization.



Closing Business Meeting

Saturday April 3, 2004

The day began with a continental breakfast in LTSC 001 and was followed at 9:30 with the rest of the oral presentations. Five people presented their research in 20-minute intervals. (See abstracts for names of presenters and their topics.)

Final Business Meeting

The closing business meeting convened at 11:20 a.m. and was called to order by President Cary Guffey. Forty-six were in attendance. He extended a special thanks to all the participants in attendance at this convention and especially to the Pi Chapter and Millikin University for hosting the meeting. Dr. Guffey then continued with comments about the state of the organization. He added that the students need to invite friends to look into Sigma Zeta. This would include members of their own campus as well as other campuses.

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

Chapter	University	Number of Attendees	
		Faculty	Students
Alpha Beta	Campbellsville	2	7
Alpha Psi	Hillsdale	1	1
Beta	McKendree	1	2
Beta Iota	Bethel	1	6
Beta Xi	Pikeville	1	4
Phi	Eureka	1	0
Pi	Millikin	1	35
Rho	U. of Indianapolis	1	5
Sigma	Our Lady of the Lake	2	3
TOTAL		11	63

Committee Reports

Auditing Committee

We examined records from April 1, 2002–June 30, 2002 and July 1 2002–June 30 2003.

We confirmed the income and expenditure amounts to sum correctly on the summary of the accounts provided by the Treasurer. We confirmed the Development fund investment totals and interest.

We recommend a single account with dual (online) access for both the Treasurer and Executive Director to replace the existing First National Bank and Millikin accounts.

Accounting (credit card, Millikin, First National) seems to be difficult to easily follow from the committee's perspective. We recommend the development of a consistent accounting scheme like the example below and that all expenses, income, expenditures, and deposits be entered as incurred and be kept up-to-date. Either a common spreadsheet or a common software would then allow merging of the two versions by the Treasurer and the Executive Director.

Sample accounting scheme:

Date	Check, Payment #, Receipt #	Expenditure	In-come	Deposit	From/ To	Pur- pose	Com- ment

We reiterate the recommendation of last year's committee that called for the development of a list of duties of the committees for distribution at the time of committee assignments.

We commend the Treasurer and the Executive Director for a cooperative effort to get the books back into what we thought to be a pretty good semblance of order and coherency.

Motion to accept the report—moved, seconded and passed.

Handbook Committee

We recommend:

1. In the section “How to host a national convention...” make deadlines for materials to be placed on the web site and to be mailed by January 15th.
2. In the section “Local Level – Service Activities” include community service and service to local charities.
3. Remove paragraph on changes proposed in 1999 and replace with revisions made at the 2004 National Convention.
4. We recommend that national officers, chapter advisors, and officers review the handbook and suggest revisions and updates prior to the 2005 National Convention.

Motion to accept the report – moved, seconded and passed.

Resolutions Committee

Be it resolved that:

1. Hotels be sure to keep the hot tub at a higher temperature than the swimming pool.
2. All Sigma Zetans learn how to draw the Greek letters, especially the sigma, in the right orientation.
3. The caterers label the barbeque sauce as different from the salad dressing. Also, the caterers should do cleanup either between the meal and talk or afterwards.
4. Nose plugs and face masks be distributed to all attendees to help filter out the “pungent” odors of the local communities.
5. Ice be provided for “cold” drinks and coffee be provided for those of us who are hopelessly addicted.
6. Pizza be ordered sufficient for the whole group instead for the whole university and that subs be sufficient for the whole group instead for just the officers.
7. François, the fox, should accompany the Rho chapter as its mascot for all future conventions.
8. Efforts to make Minnesotans comfortable at nearly subzero room temperatures and Texans with ground tremors be avoided in the future.
9. The access to the telescope eyepiece be brought up to OSHA standards.
10. The locals be educated on the correct pronunciation of Eldorado”, instead of calling it just “Eldo”.
11. The recipients of the Founders Cup be required to polish it each year before bringing it to the next convention. A bottle of Tarn-x is being donated to the national organization which should accompany the trophy.
12. ADM provide sufficient protection to visitors so that hungry fish do not attack or splash them in their attempted feeding frenzy.
13. Butt charades be declared the only *official* Sigma Zeta mixer/ice breaker.
14. Millikin update its Mac computers to be compatible with OS 10 software, so we can print Resolutions Committee reports in the future.
15. Sarah Creson and the Pi chapter be congratulated on their hard work and efforts to provide all of us with a very good convention.
16. Dr. Robert Wiedenmann be thanked for his very informative and stimulating presentation, especially his efforts to include humor and all branches of the sciences and math/computer science.

Motion to accept the report – moved, seconded and passed. One dissenting vote.

Nomination Committee

The Nominations Committee presents the following slate of National Officers for 2004-2005:

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 – Joe (“Teddy Bear”) Burnell, Rho

National President – Robb VanPutte, Beta

National Past President – Cary Guffey, Sigma

Voting was unanimous.

Founders Cup

“Grand Master” VanPutte, Chair, invited the current holder of the cup, Rho chapter, to bring the cup forward. Four chapters submitted applications: Psi chapter (Hillsdale College), Alpha Beta chapter (Campbellsville University), Beta Iota chapter (Bethel College), and Pi chapter (Millikin University). One of the issues that came up was whether or not national level activities being carried out by the current host of the National Convention should be considered. It was decided that it should not be considered. This is an issue that should be discussed via the listserve. Dr. VanPutte indicated that he would post this on the web. The winning chapter was noted for local activities such as environmental cleanup and campus participations. The prominent activity at the national level was considerable effort at recruiting chapters. They tried hard to do this in their home state.

The 2004 Founders Cup was presented to the Alpha Beta chapter at Campbellsville University, Campbellsville, Kentucky. Executive Director Harold Wilkinson read the application. The officers of the Rho chapter transferred the trophy to the Alpha Beta chapter. The Alpha Beta chapter was reminded that they have the responsibility of inscribing the trophy with the Chapter name and year of winning.

Founder’s Cup Plaque – A plaque recognizing the Rho chapter as 2003 recipients of the Founders Cup was presented to chapter officers. This is a permanent symbol of their accomplishment.

Presentations and Announcements

Host Award

A recognition plaque was also presented to the Pi Chapter for their hosting of the April 2004 National Convention. Conrad Toepfer in accepting the award gave special recognition to Sarah Creson for her efforts in pulling together the national convention. He read the following statement: “The Pi chapter would like to extend a special thanks to Sarah Creson for her activities in association with the 2004 Sigma Zeta National Convention. Those of you who have had a chance to talk to

Sarah may have discovered that she is an aneuorphilic (frog lover). Because of her contribution to the convention we would like to bestow upon her the first regular optional gift, or FROG, to recognize her as the recipient of the first annual (probably the only annual) Rana Award. During the planning process and especially during the convention if anything needed to be done, Sarah was the first one to “hop-to-it”. Her enthusiasm and energy ‘abound’ during the convention. Sarah, “urostyle” of influencing each crisis and to “dissect” the most difficult issues were instrumental in the success of this year’s convention. In honor of your efforts toward the convention the Pi chapter would like to present you with this gift and our heart felt thanks.”

President’s Award

Harold Wilkinson presented a special paperweight to Dr. Jim Reinhout for his three years of service in the national presidency.

Special Award

In honor of the significant contribution of time and energy to the organization a special recognition was made to Millard Niver, former Recorder/Treasurer of Sigma Zeta. He served 1 year as the National President-elect in 1977-78, and National Recorder/Treasurer from 1992 to 1998. He was presented with a certificate and a monetary award. A second recognition was made to Bob Moffett who served as the National Editor of the Sigma Zetan from 1994–1998 and 2002–2003. He also received a certificate and monetary award.

Closing

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

As the new president, Dr. VanPutte extended thanks to all that attended. He announced that next year’s convention would be held at Malone College, Canton, Ohio. He expressed a desire to see all there. There will also be a spring advisors meeting in late January or early February, the location to be announced at a later date.

Advisors were encouraged to make comments on the letter composed by Jim Reinhout to encourage colleges to make note of chapters at their institution.

The meeting adjourned at 12:15 p.m.



Chapter Reports

Pi Chapter Millikin University

Area One: Local Activity

1. Local Meetings

The Pi Chapter inducted 22 new members in the fall of 2003. The chapter has had biweekly meetings to conduct business and plan for the National Convention.

2. Local Activities

In order to strengthen our identity among campus groups, member of the chapter designed a Sigma Zeta t-shirt. Members have also been trained in operation of the Millikin University observatory and are available to provide stargazing opportunities to a variety of community groups. Several members participated in building tours and assisted in the observatory when schools and the public visited the observatory during the close approach of Mars in fall 2003. One member has shared results of her research with several community organizations including the Breakfast Optimists' Club, the Sangamon Valley Volunteers, and the Macon County Conservation District.

Area Two: National Activity

1. Attendance at National Convention

The Pi Chapter at Millikin University is hosting the 2004 National Convention. The chapter has 35 members participating in the convention.

2. Paper presentation at the National Convention

Nine members of the chapter will be presenting oral or poster presentations of their research.

3. Cooperation with National Chapter

The Pi chapter has communicated rosters of new members for 2003-2004.

Rho Chapter University of Indianapolis

After winning the Founder's Cup at the National Convention last year, the Rho chapter returned to the University of Indianapolis to get back to business. At the April 2003 meeting, new officers were elected for the Rho chapter. Sarah Goodrich was elected president, Bridgette Westfall – vice president, Jessica Terstenyak – treasurer, and Nicole Sweeney – secretary.

The officers and their advisor, Dr. Joe Burnell, had a pre-semester meeting on August 24th. At this meeting, the group planned to schedule several activities for the upcoming year. Among the ideas generated at this meeting were hosting speakers, planning trips, and preparing for the National Convention.

On September 3rd, officers worked at the University's Student Organization fair. Several people visited Sigma Zeta's table and picked up applications and other information about the organization.

The first club meeting was held on September 10th. At this time, club members volunteered to work at two organizational fairs and to sit on several committees. Prospective members were also encouraged to attend this meeting, and membership applications were handed out. Over the next few weeks, Sarah spoke to the University's science classes about Sigma Zeta in order to recruit new members. The efforts paid off as 25 new members were inducted into the Rho chapter.

The induction ceremony for the new members was held on October 5th. Both old and new members and our advisor met for a cookout and socialization. Approximately 35 people attended this cookout. The food and fellowship were plentiful, and an enjoyable time was had by all.

On October 18th, the club sponsored a trip to the Indiana Medical History Museum. This museum is the nation's oldest surviving pathology laboratory. The museum houses an extensive collection of medical and laboratory equipment from the early 1900s. Those attending the trip were able to see the old medical lecture room, the examination room, chemistry labs, and an anatomical specimen room. The trip was very informative and interesting.

On October 25th, Sigma Zeta hosted a table at High School Day. At this information fair, we presented prospective University students with information about our group and the qualifications necessary for membership. We hope that some of these students will join our organization upon entering the University.

The Rho chapter received a devastating blow on October 27, 2004. Our treasurer, Jessica Terstenyak, passed away. Jessica had been gone all semester due to her illness, and Kyle Antos was acting in her place. At the University's memorial service for Jessica, we presented her family with her framed national membership certificate and praised Jessica's selflessness. Although she is no longer a physical part of us, she will always remain an integral part of our chapter.

The next project undertaken by the Rho chapter was that of finishing the George Washington Carver project that had been started the previous year. Working in association with the Black Student Organization, a group of members compiled a list of Dr. Carver's accomplishments. This list was then sent to State Representative Jeffrey Thompson to be used as the basis of a resolution. We are currently awaiting the results of this work.

The chapter hosted its first speaker, Dr. Stephen Nawrocki, on February 11th. Dr. Nawrocki, a professor in the University's Anthropology department, gave a talk on forensic anthropology and his work with the FBI. Also accompanying this speech was a slide show. The event was open to the entire University and the turnout was excellent. Many attendees stayed after the lecture to speak with Dr. Nawrocki and to thank Sigma Zeta for hosting such an interesting speaker.

Our community service project, and our largest undertaking, was the Indiana Regional Science and Engineering Fair. This fair was held from March 18th through the 20th. Sigma Zeta members played a key role in the success of the fair. Our members performed various tasks such as registering students and their projects, judging projects, presenting awards, putting on a science demonstration, and cleaning up the gym. In addition, Sigma Zeta presented Children's Museum tickets to those projects they deemed as best in the elementary division.

The chapter's second speaker was hosted on March 23rd. Sara Peterson and two others, all University of Indianapolis graduates and fourth year medical students at Indiana University, came to speak to the chapter about medical school and the transitions to life after the undergraduate years. This event was open to the entire campus.

The Rho chapter co-sponsored a speaker with the Math Club on March 24th. Dr. Carl Cowen of Purdue University presented a discussion on the connections between mathematics and biology. In this discussion, he stressed the importance of collaboration among the sciences. This event was also open to the entire university.

Our final event for this report is our attendance at the national convention. This year, we are bringing five students, three of whom will be presenting research, and our advisor. This is an increase in attendance from last year's convention. At the 2004 convention, the Rho chapter will have the honor of presenting the Founder's Cup to the next winning chapter.

Sarah Goodrich
Rho Chapter President

Phi Chapter Eureka College

This year our society started out small, with just nine members. Our president was Jamie Palmer; vice president, Patty McGaughey; secretary, Jenny Cordes; and treasurer, Jen Williams. In the spring semester we inducted nine new members. Our advisor is Ms. Shelly Lindsey.

The society kept itself busy with several projects this year. We continued our campus aluminum can recycling program and provided a tutor for the school's Math Lab regularly every Thursday evening. We also volunteered our services for tutoring in math and science courses upon request. Twice in the fall semester we held clean-up days for the science building. The November 4th clean-up day was particularly successful (and fun), with a record complete attendance. At the campus tree-lighting ceremony in December, the society gave the gift of "Innovative Thinking." In April, though no students were able to go,

our advisor attended a portion of the National Convention held at Millikin. At the end of April, the Sigma Zeta Award was presented to Jamie Palmer at the college's Honors Convocation. The year concluded with the Annual Term Study Day Picnic on April 29th.

Respectfully Submitted,
Jenny Cordes, Secretary

Alpha Beta Chapter Campbellsville University

Area One: Local Activity

1. Local Meetings

Officers of the Alpha Beta Chapter for the year 2003-2004 were President Josh Knifley, Vice-President Booker Johnson, Secretary Ryan Singerman, Treasurer Holly Coffee, and Historian Gretchen Walker. Our two advisors this year are Dr. Brent Summers and Dr. Chris Bullock. The Alpha Beta chapter of Sigma Zeta will have held approximately 27 group meetings and 3 executive meetings by the week of the National Meeting. Meetings have been held each Monday at 10 pm in the Science Building; signs concerning Sigma Zeta meeting times are posted throughout the buildings of natural science curriculum - Carter Hall and the Science Building. Attendance was usually between 8-13 members and prospective members, in addition to two advisors. Meetings never exceeded 45 minutes, but no time was dedicated to reviewing the previous week's minutes. The minutes kept by Ryan Singerman have been organized and posted on the Sigma Zeta bulletin board in the science building.

2. Local Activities

- A. Two Alpha Beta members will be judging a K-8 Science Fair. Four members attended the Kentucky Academy of Science in Bowling Green, Kentucky.
- B. Five Clay Hill Memorial Forest Cleanups were scheduled and successful; Clay Hill Memorial Forest has a 1.5-mile highway adopted by the Alpha Beta Chapter. This draws awareness of litter and its effects on our environment.
- C. [Christmas] toys for hospitalized children were bought, packaged, and given to approximately 15 children at Taylor County Regional Hospital.
- D. Non-perishable foods (around Thanksgiving) were collected and given to the Crisis Center on Roberts Road.
- E. Green River Lake sponsored an all-day trash pickup called "Clean the Green". Several Alpha Beta members participated, along with approximately 100 helpful residents from the Campbellsville area.

- F. Alpha Beta members participated in a natural science cluster study session with science students (many different science teachers scheduled exams for the same week).
- G. Six themed luncheons (Italian, Chinese, etc.) were held throughout the year, one at Clay Hill Memorial Forest, one at Josh Knifley's house, and four in the Science Building. Natural Science teachers were invited, as well as prospective Sigma Zeta members.
- H. All Alpha Beta members participated in the Homecoming Parade/Float Construction/Afternoon sale of foods, drinks, etc. At least 7 meetings were held across 45 hours work at Josh Knifley's house in preparation and construction of the float; leisure time was also a must at that time.
- I. This April 22nd—Earth Day—the Alpha Beta Chapter will be erecting an area at Clay Hill Memorial Forest for composting some of the paper that flows out of trash bins on campus, especially in the post office. We will also be selling and wearing Earth Day t-shirts made by the Alpha Beta Chapter.
- J. The Alpha Beta has maintained recycling bins this year in the science building, and attempted to do so in other buildings; however, other buildings' occupants/traffic dumped non-recyclables into our bins.
- K. Pie-In-The-Face Contest will be held in April. This involves enlisting natural science faculty members to put their face in a jar and the faculty whose jar contains the most money at the end of the week gets a pie in their face in front of the science building.
- L. The Alpha Beta Chapter will be having a Car Wash and Bake Sale at Advanced Auto and Kroger, respectively.
- M. Human-I-Tees fundraising: we sold t-shirts in order to preserve 370 square feet of threatened forest Lands in the Jaguar Ecological Reserve in Brazil's Pantanal and improving the health and welfare of those who live there.
- N. On the Sigma Zeta bulletin board, we have postings of "What Can You do with a Biology Degree," career/internship opportunities, "Why Be a Member of Sigma Zeta," Sigma Zeta Member Qualifications, and friendly photos of current and past members engaging in Sigma Zeta activities (e.g., building Homecoming float, taking part in research). We also help maintain and organize five other bulletin boards on campus.
- O. We have 5 new members this year.

3. Recognition From Outside Groups

The Student Government Association allotted the Alpha Beta Chapter monies for the construction of the Homecoming Float. The Student Government Association also designated a position for the Alpha Beta president to sit as a senator at their biweekly meetings.

4. Utilizing Outside Resources

Clay Hill Memorial Forest for Fall Picnic and trash pickups, Natural Science Division Funds for one Pizza Luncheon and cluster study session.

5. Innovative Ideas Usable by Other Chapters

Pie-In-The-Face Contest, Sigma Zeta bulletin board(s), Bake sale, Adopting a Highway Litter Control, monthly discussion of major scientific topics in the news or in textbooks, Car Wash, Sale of Human-I-Tees for fundraising (each t-shirt sold preserves a certain number of square feet in The Jaguar Ecological Reserve in Brazil's Pantanal.)

Area Two: National Activity

1. Attendance at National Convention

This year, we have 7 students and 2 faculty attending the national meeting in Decatur, IL.

2. Paper and Presentation at National Convention

The Alpha Beta Chapter will have one student member attending the National Meeting to present her research project in biology.

3. Cooperation with National Chapter

The Alpha Beta Chapter has been in compliance with all necessary correspondence with Sarah Creson, including changes in attending members.

4. Recruitment of New Chapters

This year, the Alpha Beta Chapter sent the necessary information to 30 Kentucky colleges and universities; this included most of the Kentucky schools. We invited them to National Convention, gave them contact information, and presented several encouraging reasons why they should start a chapter of their own.

5. Promotion of inter-chapter activities

The Alpha Beta Chapter thanks E.K. Sutton and '97-'98 Sigma Zeta President Sara Talley for installing the web page <http://www.campbellsville.edu/szeta/index.html>. There is contact information available on this site and inter-chapter activities are encouraged and always available.

6. Cooperation with other chapters

Please see 4. and 5. above.

**Alpha Psi Chapter
Hillsdale College**

Area One: Local Activity

1. Local Meetings

A. The Alpha Psi Chapter inducted 40 new members in the fall of 2003 and plans to induct 7 new members in April of 2004.

- B. The chapter meets four times each semester for the purpose of conducting regular business and planning chapter activities.
 - C. The officers meet at the beginning of each semester to discuss the goals and activity ideas for that semester.
- 2. Community Activities**
- A. Science and Mathematics Career Networking Program planned. In cooperation with our local Iota Psi Chapter of Beta Beta Beta Biological Honorary and Hillsdale's Career Planning Office, its primary goal was to increase students' awareness of available career opportunities within the fields of Math and Science. The program was designed to encourage networking between students interested in Math and/or the Natural Sciences and established professionals in these fields, as well as provide an opportunity for students to have their questions concerning career and/or educational paths answered. Event was later canceled due to a lack of response from invited presenters, but on the agenda for next year.
 - B. Cards made by chapter members for the elderly in a local nursing home.
- 3. Social Activities**
- A. Tie dye Party: tie dyed lab coats and other clothing apparel.
 - B. Mock Research Presentations planned. Designed to provide feedback on presentation skills in preparation for the National Convention. Later canceled.
 - C. Spring Chapter Picnic planned for April: Social activity for chapter members and the Science and Mathematics faculty.
- 4. Induction Ceremonies (Fall and Spring)**
- 5. Use of Outside Resources**
- A. Speakers: Sponsored Dr. Johnson and his presentation on "Development of the HCN sub millimeter wave molecular laser and research on laser Stark Molecular Spectroscopy."
 - B. Field Trips: (1) Michigan State University (MSU) Greenhouse: Tour and presentation provided by John P. Mugg, Greenhouse Manager regarding the habitat and unique specimens grown within the greenhouse. (2) MSU Bughouse: Viewed a portion of their extensive mounted and live insect collections and had the opportunity to participate in hands-on exploration of live insects, including African and East Asian walking sticks and a Madagascar hissing cockroach. (3) MSU Field Museum: Viewed specialty exhibits on 100 years of Flight and Birds of South Asia.
- 6. Innovative Ideas**
- A. Science and Mathematics Career Networking Program
 - B. Mock Research Presentations

Area Two: National Activity

1. Attendance at National Convention

The Alpha Psi Chapter is sending one faculty member (chapter advisor) and one student representative (chapter president) to the National Convention for the first time in several years.

2. Paper Presentation at the National Convention

One Alpha Psi Chapter member is presenting the results of her research at the National Convention.

3. Cooperation with National Chapter:

The chapter has been in correspondence with the National Chapter, reporting new member rosters prior to each Induction Ceremony during the 2003-2004 academic year.

Respectfully Submitted,
Crystal L. Cornett, Chapter President
Monique A.J. Gagnier, Chapter Secretary
Dr. Jim Peters and Dr. Reinhardt Zeller, Chapter Advisors

Beta Iota Chapter Bethel College

Area One: Local Activity

1. Weekly officer/faculty advisor meetings.
2. Bimonthly chapter meetings/activities.
3. Active within community
 - A. "Sigma Zeta Workdays"—yard work done for both fundraising and as a service project for a faculty member who lost her husband from cancer.
 - B. Volunteering for UrbanHomeWorks (2 dates in April)—rescheduled from November due to limitations in dilapidated housing.
4. Promotion of departments through new faculty presentations of their research projects.
5. Spring and fall banquets with invited speakers.
6. Fall banquet speaker brought in from Ecuador to speak about sustainable ventures for third world enterprises.
7. Sponsored a t-shirt contest for creation of a Chapter t-shirt by members
8. Officers created a Chapter banner for display near Chapter's bulletin board (National Banner as template).
9. New member induction ceremony and pizza party.
10. Active recruitment of new members
 - A. Created new invitations urging all eligible sophomores, juniors, and seniors to consider Sigma Zeta membership.
 - B. 34 new members inducted this year.

- C. New members from all 4 disciplines (Biology, Chemistry, Math & Computer Science, and Physics) and science education.

Area Two: National Activity

1. Attendance at National Convention this year is 6 students, 2 faculty advisors.
2. Paper presentations at National Convention by 2 officers.
3. Advisor timely in sending necessary reports to the National Office.
4. Two faculty members attended the winter planning meeting.
5. Actively attempting recruitment of a new chapter at Northwestern College.
 - A. Three representatives (two students and one faculty member) from Northwestern attended our Fall Banquet free of charge.
 - B. Extended invitations for them to accompany us to the National Convention

Officers from the Beta Iota Chapter at Bethel College thank the National Office for consideration for this year's Founder's Cup.

Rebecca Gaalswyk, President Jason Draper, Treasurer
Brent Kobielush, Vice President Anna Kenney, Member Representative
Jessica Keller, Secretary Lisa Hamilton, Activities Coordinator

**Beta Xi Chapter
Pikeville College**

Chapter Activities of the Year

1. Fundraising activities: Bake Sale
2. Community activities

Sponsored a clothing drive; several members participated in annual Pikeville College community blood drive; several students do work at their churches.

Chapter Member Activities

1. One student was an Elementary Special Olympics Volunteer.
2. One student was a Science and Math Day Camp Volunteer.
3. Two students were lab interns for instructor.
4. Two students were resident assistants.
5. 3+ members assisted with Physics Science Olympics.
6. One member assisted with Church Food Drive.
7. One member assisted with Christmas Toy Drive.
8. Some students collected care packages to send to troops in Iraq.

Chapter Member Accomplishments

1. Four members were elected to *Who's Who Among Students in American Colleges and Universities*.

2. Four members were nominated for a United States Achievement Academy Natural Science Award.
3. Two members conducted research with Dr. Whittaker and will be presenting this research at the National Conference for the American Society of Mammalogists.
4. Two (or more) members made the National Dean's List.
5. Pikeville College Dean's List

Photos

Sarah Creson receiving "Rana" Award from Dr. Toepfer



President-elect Van-Putte reading Founders' Cup application



2004 Honor Award Winners



Crystal Lynn Cornett
Alpha Psi Chapter
Hillsdale College

Rebecca Gaalswyk
Beta Iota Chapter
Bethel College



Sarah Creson
Pi Chapter
Millikin University



Sarah K. Goodrich
Rho Chapter
University of Indianapolis





Dr. Conrad Toepfer
Millikin University



Dr. Harold Wilkinson
Millikin University
National Executive Director



Dr. James Reynhout
Bethel College
National Past President