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The REGISTER

OF PHI LAMBDA UPSILON

HONORARY CHEMICAL SOCIETY

NATIONAL OFFICERS 2002-2005

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34th National Congress

The site for the thirty-fourth National Congress of Phi Lambda Upsilon to be held on August 19 - 22, 2004 is the Wyndham Franklin Plaza in Philadelphia.

Note that the dates for the Congress immediately precede the Fall National ACS Meeting centered at the Pennsylvania Convention Center in Philadelphia. Since expenses for the delegates are covered by the Society, this presents an opportunity for students who plan to attend the ACS Meeting to also serve as delegates to the Congress also and to have their transportation to Philadelphia covered.

From the President

The National Office of Phi Lambda Upsilon is currently located at the University of Washington in Seattle, WA, the home institution of the 2002-2005 *President* of Phi Lambda Upsilon, Charles T. Campbell. Dr. Campbell is a Professor of Chemistry and a Co-Director of the Center for NanoTechnology at the University of Washington. Please see the Phi Lambda Upsilon national web page for current information at http://www.cpac.washington.edu/~campbell/plu pertaining to the society.

From the Retort

Congratulations to the 2001 Fresenius Award winner, Dr. Jillian M. Buriak at Purdue University. Information on nominating persons for this award is found on page 5. In addition, congratulations go out to all the new inductees to PLU.

A very special thanks goes to Dr. Richard M. White who served PLU faithfully to produce the *Register* for the past six years. Although Dr. White had become Vice President for the 2002-2005 term, duties at CSB/SJU in St. Cloud, MN forced him to step down from that office during his term.

It is an honor and a pleasure for me to serve Phi Lambda Upsilon as its *Editor*, although an apology must be made for the delay in the publishing of Vol. 81 and 82 of the *Register*. As you receive this issue, Vol.82 will be in press and Vol. 83 in preparation following the 34th Triennial National Congress. Articles of general interest for publication in the *Register* are solicited and should be sent to the *Editor*. Please refer to the instructions for authors on page 34. Please continue to send copies of chapter reports to the *Editor*. Please also see page 30 for applying to the Travel Grant Program and page 19 for the Chapter Activities Grant Application.

Eugene B. Grimley III
Editor

The National Fresenius Award

The National Constitution of Phi Lambda Upsilon states that "The object of this Society shall be the promotion of high scholarship and original investigation in all branches of pure and applied chemistry."

To fulfill this objective Phi Lambda Upsilon elects to membership those students who show exceptional promise in pure and applied chemistry. It also elects to Honorary Membership chemists who have made outstanding contributions to the science.

Phi Lambda Upsilon, in keeping with its stated objectives, also established an award for outstanding chemists early in their professional careers, since regular membership ordinarily goes to those at the beginning of a career and honorary membership to those at the height of or near the close of a career. This national award was established by the Society in 1965 and is known as the Phi Lambda Upsilon National Fresenius Award.

The program contains the following features: (1) The award consists of a plaque of suitable design and an honorarium, currently $1,000.00; (2) The award recipient must be under 35 years of age at the time of nomination and to have made notable contributions to chemical research, education and/or administration; (3) Administration of the award is the responsibility of a five member committee of nationally prominent scientists who will select the recipient from nominees of the chapters and officers; (4) Not more than one award will be made each year.

The first Fresenius Award was made at the Detroit meeting of the American Chemical Society in April 1965. This award of Phi Lambda Upsilon continues and extends the traditions of the Society in recognizing and honoring excellence in chemistry. It has, as the names of its recipients testify, taken its place along with Honorary membership in the Society as an award of high merit in American chemistry.

Nominations for the Society's Fresenius Award must be submitted to the National Secretary no later than January 1. The nominating letter should include a discussion stating why the individual placed in nomination is regarded as particularly worthy of consideration for the Fresenius Award. In addition, it is also requested that a biographical sketch be furnished giving the following information:

I. Full name
II. Place and date of birth
III. Educational career
IV. Professional activities (since graduation)
V. Publications
VI. Honors and/or distinctions and/or noteworthy achievements

Three letters of recommendation from former teachers or professional associates shall also be submitted.

Recipients of the National Fresenius Award

1965	Martin Karplus	Columbia University
1966	Ronald Breslow	Columbia University
1967	Mostafa El Sayed	University of California – Los Angeles
1968	John Baldeschwieler	Stanford University
1969	Roald Hoffman	Cornell University
1970	Harry Gray	California Institute of Technology
1971	Willis Flygare	University of Illinois
1972	Charles Cantor	Columbia University
1973	Nicholas Turro	Columbia University
1974	Richard Zare	Columbia University
1975	Robert Vaughn	California Institute of Technology
1976	Joseph B. Lambert	Northwestern University
1977	William B. Reinhardt	University of Colorado
1978	Patrick S. Mariano	Texas A&M University
1979	Robin J. Marks	Northwestern University
1980	John R. Shapley	University of Illinois
1981	Richard P. VanDuyne	Northwestern University
1982	Michael J. Berry	Rice University
1983	George C. Schatz	Northwestern University
1984	Mark S. Wrighton	Massachusetts Institute of Technology
1985	Ben Frieser	Purdue University
1986	Jacqueline Barton	Columbia University
1987	Ian Rothwell	Purdue University
1988	Peter G. Wolynes	University of Illinois
1989	James L. Skinner	Columbia University
1990	Nathan S. Lewis	California Institute of Technology
1991	Peter G. Schultz	University of California – Berkeley
1992	John D. Simon	University of California – San Diego
1993	Joseph T. Hupp	Northwestern University
1994	Scott D. Rychnovsky	University of Minnesota
1995	Robert M. Waymouth	Stanford University
1996	Erick M. Carreira	California Institute of Technology
1997	Christopher C. Cummins	Massachusetts Institute of Technology
1998	Chad A. Mirkin	Northwestern University
1999	Joseph DeSimone	University of North Carolina – Chapel Hill
2000	David E. Clemmer	Indiana University
2001	Jillian M. Buriak	Purdue University

2001 Fresenius Award Recipient
Dr. Jillian M. Buriak
Department of Chemistry
Purdue University

The recipient of the 2001 Fresenius Award, Dr. Jillian M. Buriak, is Assistant Professor of Chemistry at Purdue University. The award was presented to Dr. Buriak by Dr. Jack D. Graybeal, National President, on November 1, 2001.

Dr. Buriak received her B.A. Degree in Chemistry with Honors from Harvard University in 1990, and both a D.E.A in Transition Metal Chemistry and Molecular Engineering and a Ph.D. Degree in Organometallic Chemistry from the Université Louis Pasteur in Strasbourg, France, in 1995 (fully funded French Government Scholar). This was followed by a two-year postdoctoral appointment in the laboratory of Professor Reza Ghardiri at the Scripps Research Institute in La Jolla, CA. In 1997, Dr. Buriak accepted an appointment as Assistant Professor of Inorganic Chemistry at Purdue University. At Purdue, she directs a large research group of graduate and undergraduate students and is building a reputation as an outstanding teacher in the classroom.

Among many awards Professor Buriak has received are the highly competitive Camille and Henry Dreyfus Foundation's New Faculty Award, a National Science Foundation Career Award, an Alfred P. Sloan Foundation Fellowship, and most recently a Cottrell Teacher-Scholar Fellowship. According to one of her colleagues at Purdue University, "The realization of the enormous potential she demonstrated during her Ph.D. and post-doctoral experiences has taken her farther than any other young assistant professor in recent memory." Evidence of this potential, in addition to her many awards, is provided by her more than 20 independent research publications on the chemistry of semi conducting surfaces and asymmetric catalysts in such prestigious journals as *Nature*, *Journal of the American Chemical Society*, *Angewandte Chemie, Advanced Materials*, and others, in addition to four patents. Dr. Buriak has presented over 50 conference presentations and seminars, has co-organized symposia on semiconductors and electrical devices, and is a member of numerous professional societies including The American Chemical Society (ACS), The American Association for the Advancement of Science (AAAS), The Materials Research Society (MRS), and The European Materials Research Society (E-MRS).

Dr. Buriak is now widely recognized internationally as a leader in silicon surface chemistry, especially in light-emitting porous silicon. She has been invited to prepare numerous review articles in the field. Her work in this field has dramatically changed the way in which one could consider modifying the unique silicon surfaces by the attachment of alkenes and alkynes. The chemistry of these functionalized porous silicon surfaces has been exploited by her research group and many other researchers worldwide. A second major contribution from her efforts has been the development of photochemical hydrosilylation as an investigative tool for the delineation of the chemistry of porous silicon surfaces. The importance of this work is the ability to pattern different species on silicon surfaces. The application of this chemistry has been applied to other areas of science such as the use of modified porous silicon surfaces for the mass spectroscopic analysis of biological species. These stable surfaces have been proven to be very versatile as evidenced by their use in biosensors, chemical

sensors, and biomedical implant studies. In addition to this revolutionary work, Dr. Buriak is extending her work into the field of porous germanium and is developing new reactions for both the preparation and the chemical modification of this material.

Professor Buriak has taken a leading role in the nano-technological and materials chemistry field and is internationally recognized for her scientific insight and expertise. She is clearly a most creative and exciting young scientist and an excellent teacher and role model for young scientists.

President Graybeal (left) presents Dr. Jillian Buriak the 2001 Fresenius Award

33rd Congress Attendees (from left to right): Gina Mealey (Beta Beta), Sheldon Cohen (*2nd Past President*), Zachlyn Farwig (Beta Beta), Jack Graybeal (*President*), Mary Anne Nelson (Rho), Joseph Raible (Rho), Steven Meier (Alpha Alpha), Daniel Clark (Alpha Phi), Christopher Eide (Epsilon), Erin McLellan (Alpha Nu), Lydia Wilkinson (Alpha Iota), Benjamin Figard (Alpha Beta), Jeff Fieberg (*Secretary*), Manuel Soriaga (*Treasurer*), James Ham (Epsilon), Richard White (*Editor*)

OFFICAL MINUTES
OF THE
THIRTY-THIRD NATIONAL CONGRESS
OF
PHI LAMBDA UPSILON

The Thirty-third Triennial National Congress of Phi Lambda Upsilon was held in Urbana, Illinois at the Jumer's Hotel from August 24 through August 25, 2001. Arrangements for the Congress were made by the National Office. Chapter Delegates, Alternates, and National Officers totaled 19. All sessions were held in a conference room at the Jumer's Hotel. Living accommodations were all at the Jumer's Hotel.

THURSDAY, August 23, 2001

The National Executive Committee met at the Jumer's Hotel at 7:00 P.M. to review the final arrangements for the Congress and to discuss outstanding business items.

FRIDAY, August 24, 2001

First Session

President Graybeal called the opening session of the Thirty-third Congress to order at 8:30 A.M.. He proceeded to present the President's Report to the Congress. A copy of the report is appended to these minutes.

The President presented a list of tentative committee assignments and requested that he be informed if anyone wished to serve in another capacity than that proposed. Following a discussion by the members the following committee assignments were set:

Congress Program and Credentials

Christopher Eide (Epsilon)
Heather Vander Woude (Alpha)
Jeffrey Fieberg, Advisor

Register Committee

Steven Meier (Alpha Alpha)
Richard White, Advisor

Nominations Committee

Zachlyn Farwig (Beta Beta)
James Ham (Epsilon)
Jack Graybeal, Advisor

Constitution and By-laws Committee

Christopher Eide (Epsilon)
Daniel Clark (Alpha Phi)
Mary Anne Nelson (Rho)
Gina Mealey (Beta Beta)
Sheldon Cohen, Advisor

Membership and Chapter Activities Committee

Erin McLellan (Alpha Nu)
Ben Figard (Alpha Beta)
Jeff Fieberg, Advisor

Finance Committee

Joseph Raible (Rho)
Lydia Wilkinson (Alpha Iota)
Dr. Manuel Soriaga, Advisor

It was pointed out to the delegates that the voting on motions was entirely a function of the delegates and that the National Officers have no vote. The one exception is that the National Secretary holds the right of all proxy votes for this Congress.

The reports of the National Officers were given and were received by the Congress with no dissenting votes. These reports, as modified by the authors during presentation are appended to these minutes.

In addition to the formal reports of the National Officers the delegates were presented with several additional items.

1. The minutes of the 1992 Congress were distributed to the delegates.
2. It was noted that proxy votes would be used only in the case of a tie vote on a motion.
3. It was announced that a computer would be available for the preparation of committee reports.

4. A request was made for the delegates to turn in a listing of their flight times so arrangements for return to the airport could be made.
5. The primary duties of the National Secretary and the National Office were outlined for the delegates.

It was moved and seconded that the Minutes of the Thirty-second National Congress be accepted as distributed. The motion passed unanimously.

President Graybeal reported the reimbursement schedule for delegates attending the Congress, as developed by the Executive Committee. The recommended schedule is:

1. For those who drove reimbursement will be a $0.30 per mile.
2. Meals: $30.00 per diem (during travel and at the Congress).
3. Economy airfare at cost.
4. Incidental costs (tolls, parking, etc) at cost.

Approval of individual reimbursements will be made by the Finance Committee and the checks will be prepared by the close of the final session.

It was moved and seconded that the schedule for reimbursements be approved by the Congress. The motion passed unanimously.

Following a short recess the Congress reconvened and reports by the delegates reviewing chapter activities were presented.

It was moved and seconded that the reports of the delegates be accepted. The motion passed unanimously.

In order to allow the committees to begin discussions the Congress adjourned until 3:00 pm August 24, 2001.

FRIDAY, August 24, 2001

Second Session

President Graybeal called the second session of the thirty-third Congress to order at 3:00 P.M..

The report of the Credentials and Program Committee was presented to the Congress. It was moved and seconded that the report as appended to these minutes be accepted. The motion was passed without dissent. (A complete listing of the Delegates, is contained in the attached report).

Congress Program

Thursday, August 23

8:00 PM	National Executive Committee Meeting

Friday, August 24

8:00 AM	Registration and Continental Breakfast
8:30 AM	Opening Session
12:00 Noon	Lunch
1:00 PM	Committee Meetings
2:00 PM	Afternoon Break
3:00 PM	Second General Session
6:00 PM	Dinner
7:30 PM	Committee Meetings

Saturday, August 25

8:00 AM	Continental Breakfast
8:30 AM	Third General Session
10:00 AM	Group Photograph
10:30 AM	Committee Meetings
12:00 Noon	Lunch
1:00 PM	Fourth General Session
2:00 PM	Afternoon Break
2:00 PM	Completion of Committee Reports
3:00 PM	Final General Session
4:30 PM	Wrap up
5:30 PM	Social Hour
6:30 PM	Banquet

Sunday, August 26

8:00 AM	Continental Breakfast

There being no other committee reports to be accepted at this time it was moved and seconded that the Congress dissolve into the Committee of the Whole for the purpose of discussing issues of concern to the various committees. The motion passed unanimously.

The Committee of the Whole heared preliminary reports, questions, and requests for information from the committees.

The Congress returned to general session and adjourned at 5:00 P.M. to reconvene on Saturday morning.

Friday evening was used for the Committees to continue working on their reports.

SATURDAY, August 25, 2001

Third Session

The session was called to order at 8:30 A.M. by President Graybeal.

Following a call for any final reports which were ready for presentation, and there being none, it was move and seconded that the Congress dissolve into the Committee of the Whole for the purpose of continuing discussion of issues of concern to the various committees. The motion passed unanimously.

Following discussion of the preliminary reports of the Committees a group photograph of the Congress was taken and the Delegates used the remainder of the morning and each afternoon for Committee meetings and presentation of final reports.

SATURDAY, August 25, 2001

Fourth Session

The session was called to order by President Graybeal at 3:00 P.M. Final reports of all Committees were distributed to the Delegates. It was moved and seconded that the Congress return from the Committee of the whole into General Session. The motion passed without decent.

It was moved and seconded that the National Secretary be given editorial privilege for the preparation of the Minutes. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that the Report of the Finance Committee be accepted by the Congress. The motion passed unanimously.

It was moved (Figard) and seconded (Ham) that the Report of the Register Committee be accepted by the Congress. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that the Report of the Nominations Committee be accepted by the Congress. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that the Report of the Constitution and By-Laws Committee be accepted by the Congress. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that Constitutional Amendment Number 1 in the accepted Report of the Constitutional and By-Laws Committee be submitted to the Chapters for a vote. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that By-Laws Amendment Number 1 in the accepted Report of the Constitution and By-Laws Committee be accepted. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that By-Laws Amendment Number 2 in the accepted Report of the Constitution and By-Laws Committee be accepted. The motion passed unanimously.

It was moved (Figard) and seconded (Clark) that the Report of the Membership and Chapter Activities Committee be accepted by the Congress. The motion passed unanimously.

There being no further business it was moved (Raible) and seconded (Clark) that the Congress Adjourn *sine die*. The congress adjourned *sine die* at 4:00 PM.

President's Note to the Minutes of the Thirty Third National Congress

As was pointed out in a communication to the Chapters the National Secretary for the 1999-2002 trienniums, Jeff Fieberg, resigned the position only a short time prior to the Congress. Due to his having to relocate to a new academic position for the Fall of 2001 he was only able to attend the Friday sessions at the Congress. In addition, the equipment used to record the sessions produced a tape that could not be transcribed. As a result, much of the details of the discussions and some of the National Officers reports were unavailable for reproduction. The record of the closing sessions was obtainable by Dr. Christine Pastorek, the 2002-2005 Secretary.

Report of the Constitution and By-Laws Committee

The Constitution and By-Laws Committee hereby recommends that the following amendment be made to the Constitution:

1. Article II. Section 2: Strike "votes by the" and end sentence at "Executive Committee;" strike the remainder of the passage so that it reads:

   "Approval of a petition for the establishment of a new chapter shall require the affirmative vote of at least three-fourths of the votes cast by the Executive Committee."

The Constitution and By-Laws Committee hereby recommends that the following changes be made to the By-Laws:

1. Article V. Section 2(c): Strike "and the chapters shall" and change "have" to "has;" also change "Administrative Council" to "Executive Committee" so that it reads:

   "If and when the vote of the Executive Committee has been found favorable, the petitioners shall be officially notified by the National President and instructed to set a date for the installation. They may, with approval of the National President, select the installing officer."

2. Article VII. Section 1(b)(ii): Add "and serve as councilor to at-large members" so that it reads:

   "The National Vice-President shall be Chairman of the Committee on Expansion, and serve as councilor to at-large members."

The Committee recommends that no changes be made to the By-Laws at this time regarding the rules governing new chapter formation. Due to the current ratio (~1:1), the committee maintains that lowering the requirements to establish a new chapter might serve to increase the number of inactive chapters in the long term.

Respectfully Submitted,
CONSTITUTION AND BY-LAWS COMMITTEE

Christopher Eide (Epsilon)
Daniel Clark (Alpha Phi)
Mary Anne Nelson (Rho)
Gina Mealey (Beta Beta)
Sheldon Cohen, Advisor

Report of the Credentials Committee

The Credentials Committee hereby states that the following delegates have had their credentials verified and have registered at the 33rd Triennial Congress:

Heather VanderWoude, Alpha Chapter, University of Illinois
Christopher Eide, Epsilon Chapter, University of Washington
James Ham, Epsilon Chapter, University of Washington
Joseph Raible, Rho Chapter, University of Nebraska
Mary Anne Nelson, Rho Chapter, University of Nebraska
Steven Meier, Alpha Alpha Chapter, Rice University
Benjamin Figard, Alpha Beta Chapter, Oregon State University
Lydia Wilkinson, Alpha Iota Chapter, Auburn University
Erin McLellan, Alpha Nu Chapter, Rensselaer Polytechnic Institute
Daniel Clark, Alpha Phi Chapter, University of Connecticut
Zachlyn Farwig, Beta Beta Chapter, Texas A&M University
Gina Mealey, Beta Beta Chapter, Texas A&M University.

The following delegates submitted credentials, yet did not register at the congress:

Shwayta Kukreti, Alpha Chapter, University of Illinois
Christopher Cameron, Beta Lambda Chapter, North Carolina State University

The Credentials Committee recommends that the above information be allowed into the official record.

Respectfully Submitted,
CREDENTIALS COMMITTEE

Christopher Eide (Epsilon)
Heather VanderWoude (Alpha)
Jeffrey Fieberg, Advisor

Report of the Finance Committee

The Finance Committee to the Thirty-third National Congress of Phi Lambda Upsilon recommends the following:

1. The financial records of the Office of the National Treasurer of Phi Lambda Upsilon for the period of 7/1/96 to 6/30/99 as kept by Dr. T. Adrian George, former National Treasurer were inspected by Harger and Magnussen, CPA. The records are, in the opinion of this committee satisfactory and up to date. In accordance with article IV section 3-d of the National By-Laws, full audit for the triennium beginning 7/1/99 and terminating 6/30/02 should be made at the appropriate time.

2. TAX WARNING: Under the reasons for Non-Profit Foundation status of the U.S. Tax Code, an organization must satisfy both of the following to remain an organization exempt from income tax:

   An organization normally receives:
   a. *more than one-third of its support form membership fees, etc., and*
   b. *no more than one-third of its support from gross investment income over a two year period.*

We recommend that the National Treasurer evaluate quarterly the amount from the current funds that can be invested in short-term CDs, based upon the actual initiation fees received. The National Treasurer is encouraged to seek advice from a Tax Consultant or Financial Advisor in this matter.

3. The 2002-2005 Budget is as follows:

RECEIPTS

	FY	Three Year
Initiation Fees	$12,000	$36,000
Interest	4,000	12,000
Unspent funds for Centennial Celebration	16,667	50,000
Jewelry	20	60
Register Subscriptions	20	60
Surplus Principal	25,000	75,000
Total	57,707	173,120

DISBURSEMENTS

	FY	Three Year
Certificates	$1,200	$3,600
Register	3,000	9,000
Congress	7,000	21,000
Administrative Expenses	5,000	15,000

	FY	Three Year
Postage	3,000	9,000
PLU Fresenius Award	6,100	18,300
Student Travel Grants	8,000	24,000
Secretarial Aide	5,000	15,000
Student Register Award	500	1,500
Jewelry	20	60
Chapter Resurrection Project		2,000
Chapter Activities Grants	16,667	50,000
Total	55,487	168,460

Respectfully Submitted,
FINANCE COMMITTEE

Joseph Raible (Rho)
Lydia Wilkinson (Alpha Iota)
Dr. Manuel Soriaga, Advisor

The Finance Committee makes the following motions:

1. The Finance Committee moves that unspent funds ($50,000) that were budgeted for the Centennial Celebration be allocated for Chapter Activities Grants over the next three years. The Chapter Activities Grant will provide a maximum of $1000 per chapter per year available for activities approved by the National President. The Thirty-fourth Congress will consider if the Chapter Activities Grants should continue.

2. The Finance Committee moves that if the organization's Non-Profit Organization status is in serious jeopardy as determined by the National Treasurer, a one-time monetary award of no more than $250 will be awarded by the National President to each active PLU chapter.

3. The Finance Committee moves that the total value allotted for Student Travel Grants be increased to allow for an increased number of travel grants to be awarded.

4. The Finance Committee moves that multiple Student Travel Grants be available to chapters based on the number of initiates as follows: for every four new initiates per year, one additional travel grant will be made available to a maximum of five grants per chapter per six months.

5. The Finance Committee moves that the PLU Fresenius Award be increased to $5000. This amount is to be split equally between the individual and the individual's department as unrestricted funds for the recipient.

Report of the Membership and Chapter Activities Committee

1. The Committee recommends that all at large members receive equal rights and opportunities as those members who are in chapters. Specifically that they gain the ability to receive travel grants and be able to participate in some of the programs currently available to the chapter members.

2. The Committee recommends that the Finance Committee allot $50,000 in a 3 year period for a Chapter Activities Grant Fund. This is a $1000 limit per chapter per year. These grants are to be applied for by the chapters to the National President and upon approval will receive the moneys allotted for the activities. The form to be filled out and the instructions are included in Appendix A.

3. The Committee recommends the formation of an electronic alumni database. A change of status form will be posted on the PLU national web page which allows members to indicate changes in their mailing address, e-mail address, affiliation, and status. Any posting of information on the national web page will be authorized by the PLU member themselves. The information will be sent to the National Editor and will be collected and organized by the National Secretary. The National Editor will also print a smaller version in the Register. The form to be filled out is in Appendix B. This whole implementation will take place over a period of 10 years. One suggestion is to put an ad in C and E news.

Respectfully Submitted
MEMBERSHIP AND CHAPTER
ACTIVITIES COMMITTEE

Erin McLellan(Alpha Nu)
Ben Figard(Alpha Beta)
Jeff Fieberg, Advisor

Appendix A
Chapter Activities Grant Application

Name:_____ Chapter:_____
Title:_____ Amount:_____

Abstract: (No more than 250 words)

Chapter President Signature:_____

Councilor comments: (No more than 250 words)

Chapter Councilor Signature:_____

Instructions for application for funds: This is an application for the request of funds from the national PLU fund for chapter activities. The chapter can apply as many times as you want up to the amount of $1000.00 per year. Some ideas for what can be requested for are the following: speakers, travel to other chapters, picnics, chemistry demonstrations, tutoring, or community service. This application needs to be sent to the National President and will be reviewed by him/her. The chapter needs to allot a time of 4 weeks for the application to be processed and for the committee to get back to the chapter with an answer.

Appendix B
Alumni Database Form

Name:_____
Mailing address:_____
Telephone number:_____
e-mail:_____
Chapter affiliation:_____
Job title/employer:_____

Comments (can use this to indicate what information can be printed):

Report of the Register Committee
August 24, 2001

The Register Committee of the Thirty-third National Congress recommends the following items:

1. That the Register be made available for download from the PLU website.
2. That a change of address form be located on the website with the information being sent to the Editor of the Register.

Respectfully submitted,
REGISTER COMMITTEE

Steven Meier (Alpha Alpha)
Richard White, Advisor

The Report of the Nominations Committee

1. Nominations

President	Dr. Charles Campbell
Vice President	Dr. Richard White
Secretary	Dr. Christine Pastorek
Treasurer	Dr. Manuel Soriaga
Editor	*
Historian	Dr. Jack Graybeal

* No nominations were made at the time of the 33rd National Triennial Congress

2. The Committee recommends that the 33rd Triennial Congress grant the National President Jack Graybeal, and the current Nominating Committee the authority to pursue and accept nominations for the Office of Editor for the 2002-2005 election. We recommend that the emphasis of the search be directed toward current PLU members serving as professors at primary undergraduate institutions, former national PLU congressional delegates, and those members currently employed in industrial positions.

Respectively submitted,
NOMINATING COMMITTEE

Zachlyn Farwig (Beta Beta)
James Ham (Epsilon)
Jack Graybeal, Advisor

Aug. 14, 2001

Dear National PLU Executive Committee:

This letter serves as my Report for the 2001 National Congress. I am sorry I cannot attend this year.

Thanks to the help of my very capable assistant, Mr. Mack Carter, we have streamlined many jobs for the PLU officers by making them more computer-ready. We have:

1. Generated an electronic PLU letterhead for national officers, available from Mack or me upon request.

2. Made numerous Web page improvements, including adding a link to a PDF file of the PLU Officers Manual.

3. Made numerous improvements in the mechanism for recruiting At-Large members, including:

a: Added a downloadable Word form and encouraged its use by Department Chairmen when submitting their nomination lists. (Actually, they mostly get the form by requesting Mack to email it to them as an attached document, which is easier.) Most chairs chose to respond by email following our recommendation, which means we greatly reduce typing the information on each nominee or new member. We simply generate a database record with each nominee's address, etc., by copying the information directly from the electronic nomination lists.

b. We can now provide information from that database to the PLU secretary and treasurer, saving them the hassle of typing this information too. In fact, it is now so easy to do that we already print many of the cards and forms for secretary. For example, we can and do now automatically generate from this data base the 3x5 membership cards, Balfour order forms, invoice forms that go to the treasurer, file cards for keeping the national record of members, etc. It is essential that a similar procedure and database be developed to streamline the work in normal membership recruiting. That is, the chapters should be encouraged to submit their lists of new members on an electronic form. Ask me and I'll have Mack prepare such a downloadable / e-mailable form that can be accessed on the web and emailed in by each local chapter officer. The best way to get the local chapters to respond properly (i.e., with an electronic list of new officers) will be to add the following statement to the end of the Secretary's letter to local chapters when requesting then to send in lists of new members:

"We actually prefer that you send the names and addresses of new members by email, which prevents retyping of data. I will send you a form for this purpose by email upon request to: secretary's email address. We encourage you to submit this electronic list in lieu of the enclosed hard-copy form(s)." This way, you could use the same documents Mack already wrote to computer generate all the other stuff needed (i.e., membership cards, Balfour order forms, etc..). Ask us and we will send you the documents to generate these cards and forms electronically: It saves lots of hassle (and waiting time) to have them accessible so easily. It also saves mailing costs between national officers.

c. We initiated a new option for department chairmen in inviting new at-large members: The nominators can now personally hand (or mail) invitations to nominees (rather then to mail each individual nominee a letter). We simply print all the invitations / membership cards and send them in one packet to the nominator from that college. It is amazing how often the departmental chairs prefer this route. It is also a good way to get someone at that college interested in starting a new chapter. And it saves us mailing costs.

These efforts have led to high numbers of new At-Large members (97 in 2000 and 115 so far in 2001). I am not sure what the numbers were in the past few years before we started, but I think pretty tiny.

We also have helped several new chapters in the chapter formation stage, which are still in the process of applying.

We hope that you all have fun at the congress. Please pass on my warmest welcome to the conference attendees, especially to the student officers, who are really the ones out there "in the trenches" making PLU a successful organization.

Sincerely,

Charles T. Campbell
National Vice President of PLU, and Professor
phone: (206) 616-6085
fax: (206) 616-6250
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Initiates 2002

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University of Pittsburgh

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Beta Tau
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Procedure for Nominating Honorary Members

All chapters are urged to participate in nominating honorary members. Remember that regular membership in the Society in no way precludes consideration for Honorary membership. The procedure used for nomination and selection is as follows:

(a) Honorary members shall be nominated by local chapters.
(b) Each chapter shall be limited to two nominations in any one year.
(c) The nominating chapter shall submit a letter of nomination and a biographic sketch of their nominee including publications authored, positions held, honors received, and services rendered.
(d) Fifty (50) copies of the nomination shall be forwarded to the national Secretary by November 15 of the year of submission.
(e) The National Secretary shall distribute the information on the nominees to the chapters by December 15.
(f) The chapters shall return their votes on each nominee to the National Secretary by February 15.
(g) The award shall be presented by the nominating chapter in cooperation with the National Officers.

Travel Grant Program

At the 1980 Congress the representatives established a fund for the purpose of subsidizing travel expenses of student members presenting papers at scientific meetings. I would like to urge members who are in need of support for such travel to avail themselves of this opportunity. **To improve the use of this fund the 1998 Congress removed the match requirement by the chapters**. There are two allocation periods established, July 1 to December 31 and January 1 to June 30. Applications for travel grants will not be considered earlier than November 15 for the January to June period and May 15 for the July to December period. Applications must be received by the National President no later than one month before the meeting at which the paper is to be presented.

Applications should include the following information: applicants name and chapter; name, date, and location of the meeting to be attended; abstract of the paper to be presented; funds requested; travel mode; and signature of the applicants chapter counselor and chapter president.

Any given chapter is eligible to have any of its members receive a travel grant up to **$250 semiannually**. Grant applications received by the president in the two week period following the November 15 and May 15 dates shall be considered and choices made on a random basis in the event that the total requests are more than the funding available for the allocation period. Chapters which have not received funds in the given year will be given preferential consideration. Requests received after the initial two week period will be considered on a first come first served basis. Eligibility for a travel request, based on the quality of the abstract and the nature of the meeting where the paper will be presented, is to be determined by the chapter and will not be performed by the national president.

Travel Grant Abstracts

Experiments on theoretical principles of solvent-free sample preparation for MALDI-MS

S. Trimpin[1, 2], H. J. Räder[2], K. Müllen[2]

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[2]Max-Planck-Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany

These investigations are concerned with the uncertainty of the fundamental process of the analyte incorporation for successful MALDI-MS-characterization. Recent studies on the solvent-free MALDI-sample preparation method[1-7] have given reason to light up the theoretical aspect of the MALDI-process again. The attempt to sketch a uniform model of the MALDI-processes is not a target of these investigations. They join rather a multiplicity of detail investigations, in order to receive new realizations and a deeper understanding of the physiochemical processes, which are the basis for the desorption process in the MALDI method and lead to their unusual characteristics.

Different light microscopic and UV-MALDI-TOF-MS investigations were obtained for 2.5-dihydroxy benzoic acid (DHB). Light microscopic investigations revealed strong microscopic defects (**Fig. 1.I: A** defect area, **B** perfect area) on the surface of the single crystal of 2.5-DHB and

incorporated cytochrome c. The solvent-free MALDI-TOF-MS of the pulverized crystal **(Fig. 1.II)** was more uniform regarding the laser performance with a substantially smaller threshold performance, than those of the intact single crystal. This can be explained by the fact that the increased surface of the powder leads to less lattice energy of the crystal that must be broken in order to transfer the analyte and matrix molecules from the crystal lattice into the gas phase.

More detailed investigation of the crystal of 2.5-DHB and incorporated cytochrome c proved the fact that the experiments with relative laser performances> 35 (Fig. 1.11) strictly correlated with the smooth, perfect crystal surfaces B (Fig. 1.1). The minimum relative laser performances « *30)* were found within the defect surface A (Fig. 1.1). The results of these evaluated inhomogeneities of the crystal surface were in conformity with the above hypothesis that due to the lattice energy in the crystal, which intrinsically has to be overcome for successful desorption/ionization, clearly more laser performance is required for perfect crystal surfaces than for defect surfaces. A greater number of defect surfaces of a crystal lattice facilitates the MALDI-process.

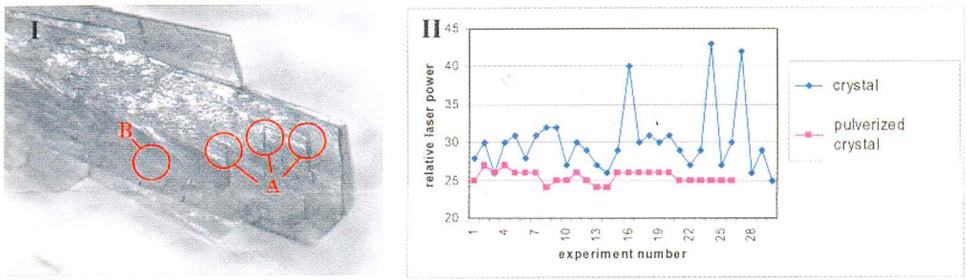

Figure 1: Investigations of the single crystal of 2.5-DHB and incorporated cytochrome *c*: **I** light microscopic investigations of the surface lattice: **A** defect areas; **B** perfect areas and **II** MALDI-TOF investigations of the intact and pulverized crystal.

The conclusion to all these experimental results is that by the increase of the surface-to-volume-ratio, the defect structures of the crystal are maximized. Therefore the lattice energy of the crystal is minimized, whereby the release of the molecules from the lattice federation is facilitated. This explicitly points out the connection between crystallinity and laser performance. The smaller the crystallinity, the smaller is also the laser performance that has to be spent. Therefore by minimizing crystallinity, the threshold performance is minimized, which leads to desorption and ionization of the analyte. Thus, additionally smaller superfluous energy is entered into the analyte:matrix-system, so that the MALDI-process becomes more gentle and less prone to fragmentation production. Contrary to Horneffer *et al*[8] we must conclude with these results that the incorporation of analyte in matrix crystals is not helpful for a MALDI-TOF-MS-analysis but obstructive, since it is exactly crystallinity that makes the underlying process energetically more difficult. The major factors that govern the successful MALDI-TOF-MS-analysis are the absorption of the matrix and the achieved homogeneity between analyte and matrix, which could be shown by further investigations of 2.4- and 2.6-DHB. This theory is strengthened by successful characterization of cytochrome c using incompatible matrices such as

dithranol and anthracene. An optimized matrix-assistance in MALDI-MS requires an intimate contact between analyte and matrix with smallest possible crystallinity.

The recognizable advantage of the incorporation of analyte into a matrix crystal is nevertheless to that extent given certain intrinsic homogenization will be received. The gentlest MALDI-process is obtained by an intimate contact between analyte and matrix independently of crystallinity. The success of the general matrix effect is independent of the compatibility between analyte and matrix molecules in the dissolved state. We can conclude furthermore that the realistic model of the conventional solvent-based MALDI-sample is much less homogenous but still effective for a sufficient MALDI-process as thought until today. Practical aspects were included to these investigations. Solvent-free MALDI-TOF-MS often yielded even better results, particularly with synthetic polymers. Since it often required less laser performance for successful desorption/ionization of the analyte[5, 7], subsequently, even very laser sensitive analytes were accessible because of the gentler MALDI-process[9].

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[5] Trimpin, S.; Rouhanipour, A.; Az, R.; Räder, H. J.; Müllen, K. *Rapid Cornrnun. Mass Spectrom.* **2001,** 15, 1364-1373.

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[9] Trmpin, S.; Grebel-Koehler, D.; Weil, T.; Räder, H. J.; Müllen, K. in prep.

Do Microwaves Damage DNA? (YES!)

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There is much controversy associated with the possible negative effects of microwave radiation on human health. The problem stems from the concept of a "microwave effect." The "microwave effect stems from the hypothesis that microwave induced chemical reactions are distinct from thermally induced chemical reactions. Many experiments were done to resolve this controversy, but still no conclusion has been reached. My project was to investigate the effects of microwave radiation on deoxyribonucleic acid (DNA) to decide whether or not microwaves can cause damage at the molecular level.

We found that DNA damage was observed as a result of exposure to microwave radiation at high temperatures. Supercoiled DNA relaxes to nicked circular DNA when damaged. By measuring the change in amount of each type of DNA within the sample, an assessment of the damage can be determined. Samples of pUC18 DNA, a plasmid supercoiled circular DNA, were exposed to microwave radiation for variable lengths of time and compared to samples heated for equal amounts of time in a heated water bath. The change in amount of supercoiled versus nicked circular DNA could be observed using gel electrophoresis, (see Figure 1).

Part of the DNA damage may be ascribed to heating by the radiation. However, the damage was greater at specific temperatures, (0, 50, 70 and 100°C), on exposure to microwaves than in the absence. Thus, the microwave induced damage was greater than heat damage. The temperature was kept constant throughout the experiment by means of ice, wax, or water bath, (0, 50, 70, and 100°C respectively). There was little or no difference in DNA damage seen at 0, 50, or 70°C. However, at 100°C a significant difference between heat and microwave damage was demonstrated. The DNA damage due to microwave radiation is consequently temperature dependent. The amount of heat exposure varied from one minute to two hours. Complete degradation of DNA by microwave exposure was seen after only seven to eight minutes of exposure at 100°C.

The results of our work show that microwave radiation can cause DNA damage under specific conditions. Current research involves the investigation of the mechanistic details of the DNA damage. With this data, we conclude that DNA damage by microwave radiation is temperature dependent and occurs at the molecular level.

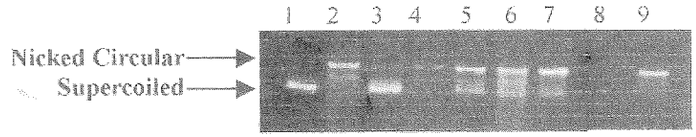

Figure 1: Gel electrophoresis of damaged DNA at 100°C. The first column is the control sample, which was exposed to no heat. Columns 2, 4, 6, and 8 were exposed to microwave radiation for 6, 7, 8, and 9 minutes respectively. Columns 3, 5 ,7, and 9 were heated in a water bath for 6, 7, 8, and 9 minutes respectively. The damage caused in the presence of microwaves occurred more quickly and to a greater extent than that in samples without radiation. After each minute more smearing could be seen in the microwaved samples and at nine minutes, the sample was completely degraded.

Instructions for Authors

All members of the society are invited to submit articles for publication in **The Register.**

Articles submitted for consideration should not be highly technical ones which require meticulous reviewing but more general in nature such as: 1) Reviews of important areas of chemistry with the objective of looking at the progress which has been made and the future direction the area is likely to take. 2) General overviews of the nature of chemical research in various non-academic research institutes. 3) Articles which will acquaint the membership with the history and development of the society. 4) Articles dealing with the philosophies and politics of science.

Within the context of these four types of articles members are invited to both submit articles of their origin or encourage qualified chemists to contribute articles. The rules regarding the processing of articles for publication are minimum but include:

1. Submitting articles should be restricted to a length of 2000 words or less.(6-7 double spaced pages).
2. All articles should be typed, double spaced and submitted in duplicate.
3. The suitability of an article for publication will be determined by the Editor in consultation with members of **The Register** Committee and the Executive Committee.
4. The deadline for receipt of articles will be September 15.
5. Authors will be consulted regarding any possible revisions or changes in articles prior to publication.
6. Articles should be mailed to the Editor: Dr. Richard White, CSB/SJU, 37 S. College Ave., St. Joseph, MN 56374-2099.

The 1998 Congress established a $500 per year award to be given to the outstanding paper presented to the Register by student PLU members. The purpose is to foster student publications. Papers must be submitted following the guidelines above. Submitted papers will be judged by five chapter presidents serving as peer reviewers.

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