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Strategic Planning Report

POLY – Councilor’s Report Dallas, March 16-20, 2014

F. Blum, M.A. Meador, W. Daly, J. Pochan

The following account summarizes some selected activities in the committees and groups that POLY Councilors are involved in.

Council Actions (abbreviated)

2015 Member Dues. The Council voted to set the member dues for 2015 at the fully escalated rate of \$158. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.

Divisional Allotment Formula. After voting to postpone its implementation by one year, the Council voted to approve a revised formula for allocating dues funds to divisions. This formula, which was presented by the Committee on Divisional Activities, will be effective with allocations for 2015 division performance.

Election Results. By electronic ballot, the Council selected Peter K. Dorhout and William A. Lester, Jr. as candidates for 2015 President-Elect. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.

Committee on Meetings and Expositions (J. Pochan)

Presentations on Demand (POD) - POD has received permission to record 179 presentations representing 27 Divisions, committees and Presidential events at the 2014 Spring National Meeting in Dallas. At present there are >1200 presentations and posters available for viewing in POD. Spring and Fall 2013 national meeting recordings are available to members only. Fall 2012 national meeting and the 2012 Green Chemistry and Engineering conference are freely available to the public. Visitations to the POD site almost doubled in the last 6 months of 2013.

The following have been named **Associate Editors** for ACS POD:

- Dr. Debbie Crans: INOR (+ CATL)
- Dr. Matt Crowe: ANYL (+ PHYS)
- Dr. Emilio Esposito: COMP (+ BIOL)
- Dr. Valeria Acquarone: AGFD (+ AGRO)
- Associate Editor to be named: POLY (+PMSE)

Abstract replacement system (Scholar One).

Development status –Scholar One has advised ACS that a 100% off line process will provide the best opportunity for a successful launch of the system. This will require ACS to hire staff to work with program chairs as the chairs will not have access to the system initially. Two of three staff positions to do this work have been filled. These positions will be titled Division Staff Advocates. This spring training sessions are planned for program using a ‘mock’ national meeting. The system will be fully operational for the Denver meeting. Abstract submission for the Denver meeting may be moved to December 15, 2014. This will be a test to ascertain if the ‘system’ can handle a later submission date. If successful, the abstract overlap problems associated with programming will be eliminated.

Future thematic titles - MPPG

- Fall 2014 San Francisco - Theme: Chemistry and Global Stewardship
Organizer: Robin Rogers, University of Alabama
- Spring 2015 Denver - Theme: Chemistry of Natural Resources

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Organizer: Robert Weber, Pacific Northwest National Laboratory

- Fall 2015 Boston - Theme: Innovation from Discovery to Application

Organizer: Carston (Rick) Wagner, University of Michigan

- Spring 2016 San Diego - Theme: Computers in Chemistry

Organizer: Kenneth Merz, Michigan State University

- Fall 2016 Philadelphia - Theme: Chemistry of the People, by the People and for the People

Organizer: Rudy Baum, ACS (Retired Editor-in-Chief, C&EN)

- Spring 2017, San Francisco - Advanced Materials, Technologies, Systems and Processes (to be vetted by divisions)

- Fall 2017, Washington, DC - Chemistry's impact on the Global Economy (to be vetted by divisions)

Council Policy Committee (CPC) (F.Blum)

The members of the CPC are working on compressing the election cycles for President-Elect, reviewing Council-related expenses, and ensuring that ACS Council Meetings are run effectively.

Divisional Activities Committee (DAC) (M. A. Meador)

Mass email system being rolled out by ACS – Magnet mail is being rolled out to divisions as a free service from ACS to better communicate with members. The mail service which will be available to all divisions later this year will provide the ability to send mass emails to the whole division or target special interests. The email system will also allow members to easily subscribe or unsubscribe to the list.

Partners for Prosperity Award announced - Recent past ACS President Marinda Wu announced a new award to recognize successful partnerships resulting in impactful outcomes in public perception of chemistry, promotion of chemistry careers or entrepreneurship, advocacy or STEM education. Divisions partnering with local sections are eligible.

National Awards Equity Committee formed – An oversight committee has been formed to examine the issue of women and minority representation in nominations for national awards and the ACS Fellows Program. Goals of the committee include increasing the nominee pool for national awards and having the nominee pool better reflect the diversity of the chemical enterprise.

Business Office Report

Lesia Linkous, Kathy Mitchem, and Ashley Ritter
March 2014

The ACS Division of Polymer Chemistry Business Office assists with the day to day operations of this Division. Current activities include:

Budget: Work with the Treasurer to implement approved budget, process daily bills, and report monthly & annual activity.

Workshops:

- Provides support including budgeting, administration, registration, advertising to include web development, materials development, and on site organization.
- 6 workshops in 2013 52,000.00 estimated,
- 3 workshops are approved for 2014, 32,000.00 in overhead estimated
- 5 workshops are currently approved for 2015, to include PPC14

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Awards and Recognitions: Assists with sponsorship collection, nomination collection, plaque creation, poster displays, and on site dissemination of awards.

Membership: Act as contact to members and assist with special needs. Responsible for operating membership booth at ACS National Meetings. Support Membership Committee by assisting with awards, student chapters, budget overview, E-News, listserv, Facebook, Twitter, annual lapel pin/letter circulation and other membership campaigns.

Elections: Provide election guidelines to Excom. Collect election bio and statements, disseminate information to membership, and provide administrative support to electronic balloting process. Report results to officers.

Graphical Abstracts/Preprints: Provide access to preprints and graphical abstracts to members, libraries, and non-members via on-line, cd, or hard copies. Catalog 2 paper copies in the office for future use. Invoice and provide copies as requested. File copyright as needed.

Newsletter: Assists Secretary with creation and dissemination of biannual newsletter to members. Collect advertising payments annually. Create drafts and circulate to board for approval. Spring Newsletter: June; Fall Newsletter: October

IAB: Assist committee with administrative tasks to include invoicing and collection of donations, drafting Bulletins, and provide committee meeting assistance.

ACS Program Support: Assist program chairs and organizers with ACS data system. Invoice, collect funding, and disburse symposia funding. Assist with on-site programing issues as needed.

Excom Support: Make arrangements for Excom winter meeting and ACS Excom dinner. Provide agendas, overheads, and other information to promote a successful meeting.

Staff/Office: The Business Office is located at Virginia Tech. The university is renovating the chemistry building. We are temporarily located at 103 Surge, Virginia Tech, Blacksburg, VA 24061. Staff: Lesia Linkous, Kathy Mitchem, and Ashley Ritter.

Workshop Committee

Co-Chairs of the Workshop Committee: Gobet Advincula & H. N. Cheng

Committee Members: Dylan Boday, Michael Hickner, Joseph Mabry, Bob (Kodak) Moore, Rakesh R Nambiar, Yongping Zha

INTERSOCIETY POLYMER EDUCATION COUNCIL (IPEC)

Semi-Annual Report to Sponsors, March, 2014

Dr. Anne Padias, *University of Arizona*

Frank Jones, *IPEC Board Secretary* [frankjones@comcast.net],

Sherri Conn Rukes, *Polymer Ambassador Chair*

IPEC is a 501(c) not-for-profit corporation supported by the Society of Plastics Engineers (SPE), the Akron Section of SPE, the Plastics Pioneers Association and three American Chemical Society Divisions: Polymer Chemistry, Polymeric Materials Science and Engineering, and Rubber. IPEC's volunteer Board of Directors comprises two voting representatives from each supporting organization.

IPEC's website is www.ipeconline.org.

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IPEC's broad goal is to interest K-12 students in science and technology. Students experience polymeric materials every day in shoes, cars, clothes, computers, bandages, packaging, etc., so it is relatively easy to stir their curiosity about what polymers are and how they are used.

IPEC accomplishes its mission primarily by supporting and helping organize the Polymer Ambassadors. The Ambassadors (www.polymerambassadors.org) are a group of about 12 talented and dedicated K-12 classroom teachers located coast-to-coast. The Polymer Ambassadors arrange, organize, and present workshops and demonstrations. Examples:

- Organizing and conducting workshops at local, regional and national teachers' meetings, where the Ambassadors teach other teachers to use polymers in classroom instruction. These workshops continue to be popular with teachers.
- Presenting papers at ACS High School Days.
- Performing demonstrations.
- Developing and writing laboratory experiments, some available as Quick Time Movies.
- Creating a presence on Facebook and other internet media.

The Polymer Ambassadors are recognized as leaders in K-12 education. Five won Presidential Awards for Science Teaching. For a partial list of Polymer Ambassador accomplishments and awards, see Appendix I.

Polymer Ambassadors have learned that K-12 teachers will teach about polymers (1) when a teacher is excited about them, (2) when a teacher can get the materials inexpensively, and (3) when the activities fit the State Science Educational Standards. Ambassadors keep these factors in mind when developing and presenting materials.

Polymer Ambassadors continue to be highly effective. From July, 2013 through February 2014, 1300 teachers and 750 students were introduced to polymer topics in workshops. These presentations that the teachers attended were from the workshops at the American Chemical Society (ACS) national and National Science Teachers Association regional (NSTA) meetings. The workshops covered various facets of polymeric science. Among the topics that attracted excellent attendance were:

- Polymers: New Twists on Old Favorites
- Nanotechnology
- What in the world are bioplastics?
- Lotions, potions, and scrubs: Polymer science in cosmetics
- Polymers for the Elementary Teacher
- The polymer chemistry in food: How to make Mountain Dewvair

The two regional NSTA conferences where the ambassadors spoke were in Charlotte, NC and Denver, CO. After these presentations, several attendees have kept in touch with us to ask questions, get additional information and to say thanks. Here are some of the comments from participants:

- "Additionally, your presentation was one of the best that I attended during the conference! Thanks for taking the time to share your expertise." Brenda Kuhns Haysville, Kansas
- "Thank you for the wonderful ideas presented" Charlotte Greene Asheville, NC
- "I had the privilege of attending your awesome session on holiday labs." Brad Rhew Walkertown, NC
- "When I think about how much time it must've taken you to purchase/prep/cleanup and make the DVD's, I am so amazed. It's incredible how you thought of every last detail right down to ponytail bands, post-it notes, and

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pens and paper. Clearly your love and enthusiasm for science and learning made this camp what it was. Thank you so much," Brenda Degenhardt

At least four Polymer Ambassadors participated in development of "Hands on Plastics" Kits, and several were involved in developing a second edition "HOP-2." These kits are intended to facilitate classroom instruction (and teacher training) at three K-12 levels. The kits are available online from the American Chemistry Council Plastics Division, see www.store.americanchemistry.com/Hands-on-Plastics

To disseminate their materials more broadly, the Ambassadors publish their materials in leading journals and on the world wide web. A partial list of about 25 publications is at www.polymerambassadors.org.

Polymer Ambassadors volunteer their time. About 85% of IPEC's budget supports Polymer Ambassador expenses, mostly travel.

New Polymer Ambassadors will be added. The budget enables us to add a few new Ambassadors. We are recruiting actively, but on a highly selective basis. New Ambassadors commit to a training year and three active years. Many continue to serve after that, but attrition occurs eventually.

We would be welcome new board members. Sponsoring organizations are encouraged to appoint third and fourth Board representatives to increase the volunteer workforce and assure attendance at meetings. Board meetings are open; the next one is at the Dallas ACS meeting.

IPEC member organizations can be proud of what IPEC accomplishes and can look forward to more high-impact activities.

APPENDIX I.

PARTIAL LIST OF POLYMER AMBASSADOR AWARDS AND ACCOMPLISHMENTS

- Five Presidential Awards for Excellence in Science Teaching
- One inductee to the High School Athletic Hall of Fame in Ohio
- Two PolyEd awards for outstanding polymer science teaching
- Two Ohaus Awards
- Three Chemical Manufacturers Association Catalyst Awards
- Two State Teacher of the Year Awards
- One Disney Award for teaching (it included a parade at Disney World)
- A single PA and her students won eight regional and seven national awards in ExploraVision using polymers in designs for future technologies
- Two National Board Certifications
- Three Kishor M. Kolkarni Distinguished High School Science Teaching Awards
- Four Board Members of the National Middle Level Science Teachers Assn.
- Three Tandy Technology Awards
- Two Regional ACS High School Teaching Awards
- Five National Material Science Instructors
- Ambassadors published about 25 articles in leading journals.
- Four Ambassadors played a major role in developing the original "Hands on Plastics Kits" and several were involved in a recent revision. "HOP-2" Kits are available from the American Chemistry Council.
- One is in charge of the ASM High School Outreach Committee.
- One is on the ASM Education Foundation Board.
- One presented to the Washington State Legislature.
- One on the Washington State Governor's education outreach committee.
- One on the Puget Sound Aviation Consortium committee.
- Several participated in program design and were presenters at the Akron Global Polymer

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Academy.

- Several helped design a major polymer exhibit at Epcot Center.
- One worked with the state Alabama on a STEM project for middle schools based on their polymer presentation on bioplastics.
- One communicated with curriculum directors from Oregon and Alaska about how to use polymer activities with ESL kids.
- One is working to put a polymer gallery into a museum in the Philippines.

POLYED Report for New Orleans ACS Meeting, March, 2014

Submitted by: Charles E. Carraher, Jr. and John P. Droske (POLYED Co-Chairs)

The agenda for the POLYED meeting on Tuesday, March 18, is available on the POLYED web site at "<http://www.polyed.org>". The meeting begins at 7:30 am in the "Cotton Bowl Room" in the Hyatt Regency Dallas. Please visit our web site for additional details about all POLYED programs.

The **Physical Chemistry of Macromolecules symposium**, organized by Paul Russo, Daniel Savin, and Frank Blum was offered at the Indianapolis ACS meeting. The Symposium was co-sponsored by the Division of Chemical Education and is part of a special POLYED CPT Task Force effort to encourage the integration of polymer/macromolecular topics in the undergraduate chemistry curriculum, including a polymer upper level elective course. The ACS Committee on Professional Training (CPT) is currently evaluating the revised guidelines for undergraduate chemistry degree programs. POLYED has been petitioning CPT to require that polymers be included in ACS-approved undergraduate chemistry curricula. In the past several years, POLYED has redoubled these efforts, including encouraging POLY and PMSE members to contact CPT. We thank the Executive Committees of the two Divisions for contacting CPT and we are pleased to report that in February, 2014, CPT conducted a survey of chairs of undergraduate chemistry departments seeking input on whether chemistry departments would prefer to offer units on polymers integrated in other chemistry courses or to offer a single polymer course. **This is a positive indication that CPT may be near to announcing a requirement that polymers be included in ACS-approved undergraduate chemistry curricula.** We thank all who have contacted CPT and we urge you to continue to do so until CPT acts positively on this.

As part of POLYED's efforts to offer polymer education symposia, an all-day symposium on the integration of polymer topics in sophomore organic chemistry courses was held at the Philadelphia ACS meeting in 2012. This all-day symposium was a collaboration with CELL, CHED, PMSE, POLY, ORGN, Rubber, and SOCED. An **ACS Symposium Series book (volume 1151)** has resulted from the symposium entitled "**Introduction of Macromolecular Science/Polymeric Materials into the Foundational Course in Organic Chemistry**". This book was published in electronic form in November, 2013, and plans are for the print edition to be available in 2014. Information about POLYED programs is featured in Chapter One of the book, especially POLYED programs that are directed towards assisting faculty interested in incorporating polymer topics in college and university chemistry courses. POLYED thanks Bob Howell for his excellent job organizing the symposium and editing this symposium series book. We also thank all who made presentations in the symposium and contributed chapters for the book.

Rick Laine is heading up a POLYED effort to update the **ACS Exam in Polymer Chemistry**. Rick met with Tom Holme, director of the ACS Exams Institute, at the Indianapolis meeting to initiate development of this exam. At this time, two exams are envisioned, one for upper level undergraduates and another for graduate students in polymer science. Anyone interested in assisting with this update of the ACS exam in Polymer Chemistry is urged to contact Rick or the POLYED Center. Rick also is interested in receiving questions from POLY and PMSE members for possible inclusion on the exams.

The **2014 Eastman Chemical Company Award for Outstanding Graduate Research in Polymer Chemistry will be presented to Dr. Felix S. Kim** at the ACS National Meeting in San Francisco August 10-14, 2014. Dr. Kim completed the Ph.D. in Chemical Engineering in 2012 at the University of Washington with Prof. Samson Jenekhe. His Ph.D. research on the charge transport properties of polymer semiconductors and

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polymer-based thin film transistors has resulted in more than 30 articles in leading journals. He is now a tenure-track Assistant Professor of Chemical Engineering and Materials Science at the Chung-Ang University in Seoul, Korea. The award will be presented during a symposium in honor of Dr. Kim in the Division of Polymeric Materials Science and Engineering.

POLYED also continues to recognize **outstanding research posters by undergraduate students** at each of the national ACS meetings. Also, an oral symposium featuring undergraduate research in polymer science will be held on Sunday at the Dallas meeting. Anyone willing to assist with evaluation of the posters should contact Bob Howell or Sarah Morgan. Sarah also coordinated a curriculum development effort at the Spring 2013 meeting entitled Polymer Science Curricula in the 21st Century.

The **POLYED Undergraduate Award for Achievement in Organic Chemistry** continues to recognize undergraduate students for their outstanding performance in sophomore Organic Chemistry courses. In 2013, ~110 students at colleges and universities were recognized with the POLYED award. Personalized certificates are sent to all awardees and congratulatory letters are sent to both the recipient and the faculty nominator. The award is administered by the POLYED Center at the University of Wisconsin-Stevens Point.

POLYED is successful because of the contributions of many. **We thank all who lead POLYED's programs and especially POLY and PMSE for their support.** Any member of POLY and PMSE who would like to become involved in POLYED should contact John Droske at the POLYED Center, University of Wisconsin-Stevens Point, jdroske@uwsp.edu or Charles Carraher, Jr., Florida-Atlantic University, carraher@fau.edu. We especially encourage anyone who would like to assist POLYED with the CPT Foundational Course efforts to please contact us.

Polymer Preprint / Circulation Report

Fred Dammont

Membership Report

K. Cavicchi and M. Meador

Membership is the heart of the POLY Division. We are happy to announce two new initiatives for fall 2014. The first is a membership drive, both the member and the student chapter that recruit the most students will be recognized for their outstanding effort at the spring 2015 ACS National meeting. Second, with the growth of student chapters in the past few years a new program to reward active student chapters and recognize the best chapter will be launched in fall 2014.

The Membership Committee awarded the University of Michigan the POLY/PMSE Student Chapter award at the ACS National Meeting in Dallas TX. The Chapter plans to use the award to support a seminar given by leading polymer researchers from both academia and industry, develop an outreach program to teach high school students about careers in polymer-related fields, and support a student networking event that will take place in October 2014 during the 38th annual Macromolecular Symposium at University of Michigan. A similar event was held at the Macomolecular Symposium in years past and was a tremendous success, with 75 students from eight universities attending, and they hope to grow the event further this year.

Industrial Advisory Board (IAB)

Industrial Advisory Board Co-Chairs

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Travis Baughman, DSM
Diana Gerbi, 3M

The Industrial Advisory Board (IAB) hosted an industry member reception held at the Spring ACS National Meetins in Dallas, TX. This provided our industry members an opportunity to mingle with others who are involved in the field of polymer chemistry. The reception was highly attended and IAB plans to host this reception again at future ACS meetings (tenatively on Monday afternoon). If you would like more information about the events location and time, e-mail lesiar@vt.edu prior to the ACS National Meeting.

IAB is sponsoring a new symposium entitled "Industrial Innovations in Polymer Chemistry", co-organized by Michael Hunt of Polymaterials, Corp. (m.hunt@polymaterials.de) and Karl Haider, Bayer MaterialScience, LLC (karl.haider@bayer.com). The first symposium is scheduled for the Fall ACS National Meeting in San Fransisco, CA. This symposium will highlight polymers in industry. This symposium will continue to be offered in future years. Please e-mail topics and speaker suggestions to the co-organizers for future consideration. With

the support of IAB and other contributors, travel fund assistance will be offered in an effort to support industrial presenters.

The Graduate Student Travel Awards are organized by the Polymer Division Membership Committee and sponsored by the IAB. The awards for the Dallas, TX, ACS meeting were received by Zachary Kean (Duke University) titled, "Stress-Responsive Polymers via Mechanochemistry", and Sebla Onbulak (State University of New York at Buffalo) titled, "Synthesis of Photo-Cross-Linkable Core-Shell Bottlebrush Copolymers and their Transformation into Well-Defined Organic Nanotubes".

Two Travel Awards are given at each ACS meeting to provide funding for polymer graduate students to travel to the ACS National Meeting to present the results of their research. The deadline for each award is usually March and August prior to each ACS meeting. For specific dates and more information visit: <http://www.polyacs.org/649.html/>

POLY Program Committee Meeting

Programming Chairs

Jeffery Youngblood, Scott Iacono, Sheng Lin-Gibson, Dylan Boday

AWARDS COMMITTEE REPORT

Virtual Strategic Plan Input

Rigoberto Advincula, Ph.D.

Professor, Case Western Reserve University