

THE SOCIETY OF PLASTICS ENGINEERS

FEBRUARY 2017

2016 SECTION AWARDS



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Communication Excellence

MEETING LOCATION:

### Olde Mill Inn

Fieldstone Room (board meeting) Morris Room (dinner) 225 Morristown Rd. (Rt. 202) Basking Ridge, NJ 07920

THURSDAY FEBRUARY 16, 2017

4:00 PM Board Meeting	5:30 PM Ne	tworking		
6:00 PM Dinner and Spea	aker Presenta	ation		
	<u>Member</u>	Non-Member		
Advance (before Noon 02	2/15/17) \$40	\$45		
At Door	\$45	\$50		
Prosp. Mbr/Sig.Other/Gu	est	\$25		
Unempl. Mbr.	\$15			
Students (show I.D.)	\$15			
R.S.V.P. to: Mr. Pete Hayles, Jr.				
peterhayles11@gmail.co	om 732-	-569-2368		

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February 16, 2017

### The power of your digital footprint: How to make websites and social media work for you. Geoff Giordano

Summary: Is your website working for you? Do you have a viable socialmedia strategy that utilizes various channels to maximize communication and conversation with your audience? Does any of this even matter?

Now more than ever, knowledge and information are power and content is king. And you need to be the king of your content. Marketing and messaging professionals are increasingly turning to tactics and strategies that have long been the bailiwick of daily journalists: frequent, immediate and compelling stories that keep audiences coming back to their customers' sites. Whether you are running a small production shop, a multinational manufacturing network or a cause-oriented organization, creating fresh "content" that attracts customers or members is job No. 1 for your media team. Content has always been the product that journalists produce; it is now a product non-media organizations must produce to keep audiences aware of and interested in their products and services.

For the individual contributor or non-marketing person, what is the value of being involved in social media and maintaining a digital presence? And how can an organization like our local section maximize the value of our website, Facebook and other digital channels?

Conversely, how can a plastics professional be a savvy consumer of digital media and find authentic and actionable information about a topic using search engines? With so much content available, how does one find it — and how do you know if it's good or not?

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### **UPCOMING MEETING DATES**

Feb. 16, 2017	Section Meeting
March 16, 2017	Section Meeting
April TBD	Meeting at Rutgers
May 8-10	ANTEC <sup>®</sup>
May 18, 2017	Awards Meeting
June 6, 2017	Golf Outing

### EDITOR'S NOTE

We are excited to present our new Section website—check it out at www.SPE-PNJ.org. You can also access it by a link at the bottom of our web page on the main SPE site, www.4spe.org/PalisadesNewJersey. While it is still a work in progress, we hope that it provides

a quick and easy way for more people to find out about us and our activities. Would you like a quick tour of our website? On the menu bar at the top of the page, if you hover over/click "About Us" you will see a dropdown menu for a list of our directors and committee chairs, our history, our newsletters, and our sponsors. Click on "Scholarships" to see information about applying this year. Our scholarship information can also be found on page 3 of this newsletter. Click on "Student Chapters" for information about our two affiliated student chapters. Click on "Calendar" for meeting information. You can also click on any of our sponsors' logos that are scrolling at the bottom of the page to be taken directly to the sponsors' websites.

We also hope to include more of our Section history and highlight some of the notable accomplishments and inventions our members have achieved over the years. If you have a suggested contribution to our "History" page, you can email it to me or you can click "Contact Us" on the menu bar of the website.

Thanks are due to Jack Dispenza and Peggy Schipper for getting this project moving and to Ann Campbell for creating the site. Please let us know if you have any comments or suggestions, especially if you would like to help improve and update content.

The speaker for our February Section Meeting proposed a timely topic—Geoff Giordano will be talking about web content and social media—not just for our section or marketing professionals, but for everyone. Hope to see you there!

Jennifer Markarian, Editor technicalwritingsolutions@comcast.net



This talk aims to advise on the following topics:

- The value of digital media: A big-picture perspective on why and how to get one's company conversant in social media
- How to use specific social media channels and gauge their effectiveness with metrics and your "editorial gut"
- How to be a good "digital citizen" and broaden your digital presence
- Pitfalls to avoid in using your social network
- How to maximize the effectiveness of your website and digital channels especially when time and personnel are limited
- Tailoring your message to your mission (for example, commercial vs. nonprofit)
- Digital discipline: Developing your "internet gut" and research ability when using social media and deciding what is valuable information and who are valuable content partners

### Speaker bio:

**Geoff Giordano** is an award-winning newspaper and magazine editor, designer and reporter who brought his hard-news style to industrial trade publishing. He has served as editor-in-chief of publications serving the dental, hospital medicine, food and pharmaceutical industries. He shaped social-media strategy as the first director of communications for the Laser Institute of America. His content-marketing venture, Driven Inbound, prides itself in tone-perfect and timely communications created with the care that gets clients noticed and quickly enhances their credibility among their peers and customers.



Usage For V-0	<u>LDR</u>	Carrier <u>Resin</u>	Type	<u>Code</u>
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Contact Joe Serbaroli at: joseph.serbaroli@ampacet.com or:

Ampacet Corp., Tarrytown, NY 800-888-4267

### The Palisades-New Jersey Section of the Society of Plastics Engineers Offers Academic Scholarships

Young people are not only our pride and joy but they are also the future leaders of the world. So, they deserve our blessings and support. With that in mind, the Palisades-New Jersey Section of the Society of Plastics Engineers (SPE) is proud to offer academic scholarships to associated members who have demonstrated excellence in various fields of study. The scholarship categories and criteria are listed below. If you, or a family member, are interested in participating **please submit the required documents by April 15, 2017.** 



If you are not a current member of SPE but you are interested in joining or becoming affiliated with the SPE Palisades-New Jersey Section, please contact Mike Carnese, 732-208-4333, mjcarnese@msn.com or visit http://www.4spe.org

Scholarship Name	Scholarship Award	Number Available	Academic Criteria	Society of Plastics Engineers (SPE), Palisades-New Jersey Section Criteria
ALVA WHITNEY Graduate Scholarship	\$4,000	1	Graduate Study In Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grand- child of active Palisades-New Jersey Section Member
JACK RYAN UNDERGRADUATE SCHOLARSHIP	\$4,000	1	Undergraduate Study in Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grand- child of active Palisades-New Jersey Section Member
RICHARD BRADLEY AND STEPHEN DUER UNDERGRADUATE SCHOLARSHIPS	\$2,000 R	2	Undergraduate study in Physical, Chemical, or Materials Science/Engineering, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grand- child of active Palisades-New Jersey Section Member
FRANCIS MCANDREN AND SAL MONTE HIGH SCHOOL SCHOLARSHIPS	N \$2,000	2	Planned Study in any field	Graduating High School Student at time of award, Child or Grandchild of an active Palisades-New Jersey Section Member
PALISADES-NEW JERS DISCRETIONARY SCHOLARSHIPS	EY Varied	TBD	Graduate or Undergraduate Study In Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grand- child of active Palisades-New Jersey Section Member

To apply for a scholarship, please submit the documents listed below. Official transcripts must be submitted by postal mail or courier (i.e. FedEx, UPS) to the address below. Transcripts are considered confidential and will not be viewed by anyone outside of the evaluation team. Essays and membership information may be submitted by email to mark.lavach@arkema.com *Submit official transcripts to: Mark Lavach, ARKEMA INC. 900 First Avenue, King of Prussia PA 19406* Required Documents:

- Official Transcript
- A one to two page essay describing your contributions to your chosen field of study or how the scholarship award might help you to achieve your future goals.
- Your SPE membership number or the number of the member to whom you are related (as necessary).

## The deadline for submissions April 15, 2017. Awards will be announced in May 2017 and will be distributed at the final Palisades-New Jersey Section Meeting planned for May 18, 2017



# Society of Plastics Engineers Palisades-New Jersey Section Annual Golf Outing 2017





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The following SPE members recently joined (or re-joined) our Section – in either case, welcome!

New professional members to our Section are: Kim Hongkyu (Emeritus member) Nicolas Beduhn, Chase Plastics Michael Bohon, A Schulman Terry Kaiserman, T-ink Victor Lifton, Evonik John Murphy, Bipore Medical Devices Alan Pape, Shamrock Technologies Sam Redick, Star Thermoplastics David Rosa, consultant Matthew Roselle, Peter-Greven US

And new student members associated with our Section are: Vinod Raman, William Novak, Austin Cruz, and Alex Lee





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### STUDENT RESEARCH HIGHLIGHT

### Nanopatterning of Bioengineered Polymer Surfaces

Haoyu Wang, Stevens Institute of Technology

The immobilization of proteins often results in changes in proteins' conformation and activity as a result of complex interactions between the protein and the surface, such as hydrophobic, hydrophilic and electrostatic interactions. These interactions can lead to the non-specific adhesion of proteins on surfaces that, in medical applications, for example, may cause bioimplant failures, infections and inflammation. It is, therefore, important to understand and control the protein-surface interactions, which are influenced by a number of factors such as physical and chemical properties of the solid surface, the nature of protein molecules, the protein-surface interface, and immobilization strategies. It has been shown that nanoporous materials can provide a protective environment for proteins. This project highlights the functionalization of nanoporous polymer thin films with different types of proteins (globular lysozyme/streptavidin and rod-like fibrinogen), with the aim of understanding structure, elasticity and bioactivity relationships of the proteins confined within polymeric nanopores. The main objective is to understand the effect of surface chemistry, topography and protein geometry on protein-surface interactions. We prepared nanoporous polystyrene and poly (methyl methacrylate) thin films with 15-200nm pores using e-beam lithography, and chemically attached the proteins into nanopores. The conformational structure of proteins inside the nanopores was analyzed by Fourier transform infrared spectroscopy (FTIR). Secondary derivative analysis and curve fitting of FTIR data revealed that fibrinogen undergoes less structural change when the pore size (50nm) is close to its length (46nm). Atomic force microscopy (AFM) nanoindentation measurements showed that both lysozyme and streptavidin behaved more stiffly when the pore dimension changed from micron to nanosize, whereas fibrinogen had the lowest elastic modulus within 50nm pores. Moreover, lysozyme confined within polymeric nanopores showed higher specific bioactivity than proteins on flat surfaces. These findings will impact the design of hybrid biomaterials for a wide range of applications in biosensing, cell-engineering, tissueengineering and food processing.

### Related articles and presentations include the following:

### CONFERENCE PRESENTATIONS

- Wang, Haoyu, and Pinar Akcora. "Protein Functionalized Nanopatterned Heterogeneous Surface." Brookhaven National Laboratory Early Career Researcher Symposium. 2016
- Wang, Haoyu, and Pinar Akcora. "Protein Functionalities on Nanopatterned Heterogeneous Bioengineered Surfaces." NJ Tech Council Summer Intern & Research Program Presentations. 2016.
- Wang, Haoyu, and Pinar Akcora. "Elastic Properties of Lysozyme Confined in Nanoporous Polymer Films." APS March Meeting 2016.
- Wang, Haoyu, and Pinar Akcora. "Elastic Properties of Protein Functionalized Nanoporous Polymer Films." Graduate Research Conference. Stevens Institute of Technology. 2016.
- 5. Wang, Haoyu, and Pinar Akcora. "Protein-Polymer Functionalized Nanopatterned Surfaces." APS March meeting 2015.

### JOURNAL PUBLICATIONS

- 1. Wang, Haoyu, Pinar Akcora. "Confinement Effect on Structure and Elasticity of Protein Interfacing Polymers." Soft Matter (2017).
- 2. Wang, Haoyu, Charles T. Black, and Pinar Akcora. "Elastic Properties of Protein Functionalized Nanoporous Polymer Films." Langmuir (2015).

### Biography



Haoyu Wang is a Ph.D. candidate in Materials Science and Engineering at Stevens Institute of Technology and works as a research assistant in Prof. Pinar Akcora's Soft Materials Laboratory. Haoyu earned his Bachelor of Materials Science and Engineering in 2010 at Shanghai Jiao Tong University in China. Haoyu previously served as the president of the Stevens-SPE Student Chapter (2015-2016), and

now is on the board of directors of the SPE Palisades-New Jersey section. In this role, he is responsible for being the liaison between the professional section and the Stevens student chapter.

Haoyu's research focuses on protein functionalization of nanoporous polymer thin films to understand protein-surface interactions on the stability of proteins which will determine the performance of biosensors and biofilms for medical applications. His expertise includes polymer synthesis, thin films and characterization, analytical chemistry and nanofabrication. He also previously worked on the manufacturing of titanium dioxide based energy devices and bioimplants. Haoyu is skilled with surface and biomolecular characterization techniques; he is currently the authorized user of Atomic Force Microscopy, Fourier Transform Infrared Spectroscopy, scanning electron microscopy and e-beam lithography tool in Brookhaven National Laboratory.

Haoyu can be contacted by email at hwang31@stevens.edu and welcomes discussion about his research as well as career opportunities in the plastic or biopolymer industries.

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