

# The Chemical Bulletin

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JANUARY • 2018

## CHICAGO SECTION AMERICAN CHEMICAL SOCIETY JOINT MEETING WITH THE AMERICAN INSTITUTE OF CHEMICAL ENGINEERS THURSDAY, JANUARY 25, 2018

Main Location:  
Roosevelt University  
Alumni Hall  
1400 N. Roosevelt Blvd  
Schaumburg, IL 60173

[http://chicagoacs.org/images/downloads/Maps\\_of\\_venues/venuemap\\_rooseveltschaumburg\\_2017.pdf](http://chicagoacs.org/images/downloads/Maps_of_venues/venuemap_rooseveltschaumburg_2017.pdf)

PARKING: Free

### Also Being Streamed to Satellite Locations:

#1  
College of Lake County  
Southlake Campus  
Room V336-34  
1120 S. Milwaukee Avenue  
Vernon Hills, IL 60061

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<http://www.clcillinois.edu/aboutclc/locations/southlake/maps>

#3  
Purdue University Northwest  
Gyte Building Room 240  
2200 169th Street  
Hammond, IN 46323

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[http://chicagoacs.org/images/downloads/Maps\\_of\\_venues/purduenw\\_map.pdf](http://chicagoacs.org/images/downloads/Maps_of_venues/purduenw_map.pdf)

<https://www.pnw.edu/visitors-guide/maps/hammond-campus>  
REGISTRATION, PRE-MEETING

#2  
Loyola University  
Life Science Building  
Room 142 (Auditorium)  
1050 W. Sheridan  
Chicago, IL 60660

\$7.00  
[http://chicagoacs.org/images/downloads/Maps\\_of\\_venues/loyola\\_mapdir\\_quinlan142.pdf](http://chicagoacs.org/images/downloads/Maps_of_venues/loyola_mapdir_quinlan142.pdf)

#4  
North Central College  
Wentz Science Center  
Room 368  
131 S. Loomis Street  
Naperville, IL 60540

[http://chicagoacs.org/images/downloads/Maps\\_of\\_venues/ncc\\_sciencecenter.pdf](http://chicagoacs.org/images/downloads/Maps_of_venues/ncc_sciencecenter.pdf)

PRESENTATION,  
SOCIAL HOUR 5:30 PM – 6:30 PM

DINNER 6:30 PM – 7:30 PM

ANNOUNCEMENTS 7:30 PM – 7:45 PM

TECHNICAL PRESENTATION  
AND QUESTION 7:45 PM – 8:45 PM



Vince Anewenter

Director of the Rapid Prototyping  
Consortium at the Milwaukee School of  
Engineering

**Title:** “Additive Manufacturing – Now  
and in the Future”

(continued from page 1)

## PRE-MEETING PRESENTATION ABSTRACT

Additive Manufacturing (AM) and 3D Printing has been in the news more and more over the past few years. It is often referred to by everyone from design engineers and medical professionals right down to elementary school students. Even with all the talk, there is still a line between hobbyist using the lower cost 3D printing technologies and true additive platforms in real manufacturing applications. In this presentation, DSM will demonstrate many of the applications where true additive manufacturing makes a significant impact in industries like aerospace, automotive and medical.

## BIOGRAPHY

**Brett Register** holds a Bachelor of Science degree from the University of Wisconsin at La Crosse. Brett's main expertise lies within the 3D Printing/Additive Manufacturing industry. He has worked for DSM for 18 years; during that time, he has held various roles within R&D where he developed 3D Printing resins for stereolithography. In his current role, he helps bring new 3D Printing resins to the market, aids customers in application development, and manages a group within R&D that runs a large number of industrial 3D Printers (mostly Stereolithography). When Brett is not at work you can most likely find him on a trout stream in Southwestern Wisconsin.

## DINNER MEETING PRESENTATION ABSTRACT

**Vince Anewenter** will present a brief overview of MSOE's Rapid Prototyping Center, how it operates, technology overview, and guiding mission. This will lead into an overview of the current status of the additive manufacturing industry followed by a forward looking discussion on what the future might hold for current and emerging technologies.

## MEAL OPTIONS - Depends on location:

**MAIN SITE** - Roosevelt University - Schaumburg  
Buffet Style: Garden Salad, Rosemary Chicken, Vegetable Lasagna in Tomato Cream Sauce, Tricolor Roasted Potatoes, Roasted Vegetable Medley, dinner roll, desert, beverage

**REMOTE SITE #1** - College of Lake County  
Choice of either Panera Box Lunch Turkey Sandwich or Mediterranean Veggie Sandwich (both come with potato chips, pickle, a cookie and beverage)

**REMOTE SITE #2** - Loyola University Cafeteria style at nearby de Nobili Cafeteria

For all sites listed above:  
\$15 – ACS or AIChE Members  
\$17 – Non Member

**REMOTE SITE #3** Purdue University NW  
No Food

**REMOTE SITE #4** North Central College  
No Food

## BIOGRAPHY

**Vince Anewenter** holds a BS in Business Finance from MSOE's Raider School of Business and is a Journeyman toolmaker. He is currently the Director of the Rapid Prototyping Consortium at the Milwaukee School of Engineering where he has been actively involved in the additive manufacturing industry since 2004. As Director, Mr. Anewenter is responsible for providing strategic additive manufacturing guidance and new product development expertise to a non-competitor consortium of over 45 companies located throughout the world. Areas of expertise include: additive manufacturing, 3D scanning, injection molding, stamping, cast-

January, 2018 Vol. 105, No. 1. Published by the Chicago Section of The American Chemical Society, Editorial Staff: Paul Brandt, Editor; Mike Koehler, Proofreader. Address: 1400 Renaissance Dr., Suite 312, Park Ridge, Illinois 60068; 847/391-9091. Subscription rates: \$15 per year. Frequency: monthly-September through June.

## RESERVATIONS:

**Dinner Registration Deadline:**  
**11:00 am on Monday, January 22**  
**Lecture-only Registration Deadline:**  
**11:00 am on Wednesday January 24**

Dinner reservations are required and should be received in the Section Office via phone (847-391-9091), email ([chicagoacs@ameritech.net](mailto:chicagoacs@ameritech.net)) or website (<http://chicagoacs.org/meetinginfo.php?id=124&ts=1510071845>). PLEASE HONOR YOUR RESERVATIONS. **The Section must pay for all dinner orders. No-shows will be billed.**



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monthly meetings



<https://chicagoacs.starchapter.com/meet-reg1.php?id=127>

ings and product design.

Vince also serves on the Board of Directors of the Additive Manufacturing Users Group (AMUG) as Treasurer and Director since 2012. AMUG is the largest users conference for the additive manufacturing industry in the world

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## CHAIR'S LETTER

Happy New Year

I wish you all a happy and prosperous 2018.

2017 saw a revolutionary way of bringing meetings to our members. By streaming to several locations around the Chicago area our meetings were made more accessible. We started off with two locations and will have four for our January meeting. My thanks go out to Fran Kravitz for her vision and leadership in 2017. Fran has also served as a great mentor and coach for me as I prepare to Chair the section.

I am very big fan of vision and mission and believe that successful organizations have alignment with the vision and mission of the organization. In 2017 we worked on aligning the vision and mission of our local section with that of our national organization:

**VISION:** Improving people's lives through the transforming power of chemistry

**MISSION:** Advancing the broader chemistry enterprise and its practitioners for the benefit of Earth and its people

To which end we adopted the following:

**Mission:** The mission of the Chicago Section of the American Chemical Society is to advance the chemical sciences and their practitioners for the benefit of Earth and its people.

**Vision:** The vision of the Chicago Section of the American Chemical Society is to improve people's lives through chemistry and its applications.

We will continue developing our 5 year plan in 2018. Everything we do in our section should be aligned with the vision and mission of the ACS. As we look at the core values of the ACS, I've been reflecting on how we are adopting them:

**Passion for Chemistry and the Global Chemistry Enterprise:** At our monthly meetings, by bringing in dynamic speakers we create an environment for chemists to socialize and network. Through our Primary School Education, High School Education, and College Education and Project SEED Committees we share our passion for students of all ages. Through our Community Activities, and State Fair committees we share our passion with the general public. To which end we will be looking to do a great deal more activities including hosting Science Café events.

**Focus on Members:** We aim to create opportunities for personal development by creating an atmosphere at our monthly meetings to network with other scientists but also through our Employment and Professional Relations committee where we are now focused on career development. Our Senior Chemists Committee and Young Chemists Committee create opportunities not only to socialize, but to gain a greater appreciation of companies in our area through visits and tours. And of course it's important to recognize our members through our awards.

**Professionalism, Safety, and Ethics:** The Environmental and Lab Safety and the Public Affairs committees provide us with knowledge, where we are very involved in the national ACS.

**Diversity and Inclusion:** We promote diversity not only through the activities of our Minority Affairs and Women Chemists Committees but also but also by bringing in speakers with diverse disciplines, backgrounds and point of views.

The Chicago Section is a very active section with a rich tradition. There are a vast number of opportunities for members to get involved. At each meeting in 2018, we will be highlighting our committees; I encourage you to learn more about them and get involved with the ones that align with your passion.

The Communications/Technology Committee has done a tremendous job streaming our meetings and promoting our activities in 2017 and will continue to do so in 2018. So look and be aware, there's an ACS meeting at a location near you.

Finally I'd like to thank our committee and board members for their diligent work and whose support I know I can count on in 2018.

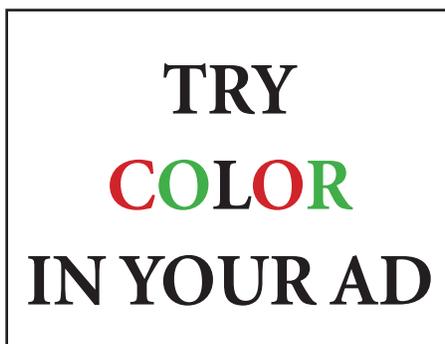
So enjoy the celebrations as we bring in the New Year, we have a lot of work to do at "Improving people's lives through the transforming power of chemistry."

Anthony Toussaint

## NEW AWARD - EXCELLENCE IN HIGH SCHOOL TEACHING OF CHEMISTRY

The Chicago Section of the American Chemical Society has a new award - The Chicago Section Award for High School Teaching of Chemistry. While teachers of students who win the scholarship examination get a cash award, the new award is designed to recognize, encourage and stimulate outstanding teachers of high school chemistry (or a chemical science) in the Chicago section. The awardee will receive \$1000, a plaque and membership for one year in the American Association of Chemistry Teachers (AACT). The awardee is to be chosen annually by a selection committee composed of the Awards Committee chair, the High School Education Committee chair and the College Education Committee chair. Nominations are due July 1. The nomination portfolio should include a copy of the Nomination Information Form which gives the name of the nominee, school and email address (among other pieces of information), a recommendation letter of not more than 750 words submitted by the nominator with comments on the quality of the nominee's teaching, the nominee's ability to challenge and inspire students, any extracurricular work in chemistry or a chemical science by the nominee, including science fairs, science clubs, and activities that stimulate the interest of young people in chemistry and related sciences, a description of the nominee's willingness to keep up-to-date in the field, as evidenced by the pursuit of a higher degree in chemistry or a chemical science, enrollment in refresher courses and summer institutes, regular attendance at scientific meetings, membership in professional organizations, and other means of self-improvement, evidence of leadership and/or active involvement within the profession, and evidence of chemical safety. A copy of a current curriculum vitae or resume that includes a list of the nominee's honors, professional activities, and additional evidence of service to the profession should also be included. The nomination portfolio should be emailed to the chair of the Awards Committee. The award will be given by the Section at the Chicago Section's Education Night in September. For more information, contact the chair of the Awards Committee, [chicagoacs@ameritech.net](mailto:chicagoacs@ameritech.net).

Barb Moriarty



## 2018 BOARD AND COMMITTEE CHAIRS

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Younger Chemists	Joel Schoenburg Mona Soflaee	<a href="mailto:joenburg@gmail.com">joenburg@gmail.com</a> <a href="mailto:mhosei2@uic.edu">mhosei2@uic.edu</a>

## "CHEM SHORTS" For Kids

### That's Some Spicy Water!

#### Materials:

Glass  
Water  
Pepper  
Dish Soap

#### Experiment:

In a glass of water, lightly sprinkle a little pepper onto it. What do you see happen? Maybe some of the flakes sank and some of them floated? Now, touch your fingertip to the dishwashing soap and then using that finger, touch it to the surface of the water. What do you see happening now?



#### What's happening?

In the November issue we talked about

how polar water was and what effect soap has on water. This is another application of the same principle. First of all, most likely some of the pepper sank when you sprinkled it on the water. If something sinks in water we say it is more dense than water. It turns out that the density of pepper is about  $1.5 \text{ g/cm}^3$  while that of water is  $1.0 \text{ g/cm}^3$  (or  $\text{g/mL}$ ). So if pepper is more dense than water why doesn't it all sink? This is where surface tension comes into play. In the past year we've talked a lot about surface tension and that with water being as polar as it is, those water molecules like to hold onto each other and not let things go through them easily (that's why water bugs are able to walk on water). I like to think of water as a mini magnet and those magnets hold onto each other. Because the water holds so tightly to itself, most of the pepper is able to float on water. Probably the first thing that you noticed though was that the pepper went scurrying to the edge of the glass when you touched the soap to the water. The soap is breaking the surface tension and so the pepper stays with the water that still has surface tension. When I say it lost its surface tension, what does that really mean? Again, the surface tension is caused by water molecules holding very strongly to each other and so the soap is disrupting those interactions by creating new interactions of the water with the soap which are not nearly as strong as the water-water interactions. We saw this in last month's ChemShorts when we touched a toothpick with soap on it to a water droplet and the droplet lost its sphere-like shape. It's possible that some of the pepper ended up sinking as the soap formed micelles around the pepper – although those pepper par-

ticles are really, really, really BIG! These micelles would allow the pepper to sink but most likely the water simply lost its surface tension allowing the more dense pepper to sink.

One last note, did you happen to notice how fast that pepper moved? I am amazed at how fast molecules in water move. It turns out that they move at approximately 1300 miles per hour or 590 meters per second! That's fast.

To see another take on this experiment, check out the Marangoni effect at Khan Academy. <https://www.khanacademy.org/partner-content/mit-k12/mit-k12-physics/v/the-marangoni-effect-how-to-make-a-soap-propelled-boat>

#### References:

<http://www.abc.net.au/science/surfing/scientist/pepperscatter.htm>  
<http://www.verticallearning.org/curriculum/science/gr7/student/unit01/page05.html>

To view all past "ChemShorts for Kids," go to: [http://chicagoacs.org/articles/article\\_category/1](http://chicagoacs.org/articles/article_category/1)

Paul Brandt

The mission of the Chicago Section of the ACS is to advance the chemical sciences and their practitioners for the benefit of Earth and its people

## CALENDAR

**January 11:** Chicago ACS Section Board Meeting

**January 23:** The Annual IIT Bridge Competition at IIT's Main Campus (Herman Hall). You can find information on the Bridge Competition at <http://bridge-contest.phys.iit.edu/public/chicago/index>

**January 25:** Chicago ACS Section Dinner Meeting. Vince Anewenter presents "Additive Manufacturing – Now and in the Future." **See details in this issue.**

**February 8:** Chicago ACS Section Board Meeting

**February 11:** Fermilab Family Open House at the Lederman Science Center from 1-5 pm. Children must be accompanied by an adult (There's plenty for the grown-ups too). Most appropriate for children in grades 3 and up. <http://ed.fnal.gov/events/openhouse/>

**February 16:** Chicago ACS Section Dinner Meeting.

**February 24:** 34th Annual Engineers Week Expo at the Illinois Institute of Technology - Rice Campus at 201 East Loop Drive, Wheaton (10:30 – 3:30) "Engineering New Horizons" <http://appliedtech.iit.edu/engineersweek>

**February 26 – March 1:** Pittcon 2018 will be in Orlando, FL. <http://pittcon.org/>

**March 15 – 18:** NSTA's National Conference "Science on My Mind", Atlanta, GA. <http://www.nsta.org/conferences/national.aspx>

**March 18 – 22:** 255th American Chemical Society National Meeting and Exposition "Nexus of Food, Energy & Water", New Orleans, LA. [https://www.acs.org/content/acs/en/meetings/national-meeting.html?sc=meetings\\_170818\\_mtg\\_NO18\\_od](https://www.acs.org/content/acs/en/meetings/national-meeting.html?sc=meetings_170818_mtg_NO18_od)

**March 23:** Chicago ACS Section Dinner Meeting.

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