

AIChE NSEF Newsletter

Fall 2017

Message from the Chair

The AIChE Annual Meeting is upon us! Through the excellent leadership of our NSEF community, we have organized an engaging program not to be missed. This includes plenary talks featuring Dr. Daniel W. Pack and Dr. William A. Tisdale, our 2017 NSEF Young Investigatory Awardee, as well as plenary sessions in bionanotechnology and Graduate Student Award sessions in Carbon Nanomaterials and Bionanotechnology. We hope you will join us for our first NSEF Business Meeting on October 31st and our annual NSEF Reception on November 1st to meet fellow NSEF members and its leadership team, to celebrate achievements throughout our community, and to help guide the future of our forum and learn how you can get involved. This year we are conducting our first student workshop "Nanoscale Science & Engineering: Paving the Future of the Field" on October 28th to engage our next generation of high-tech workers in a discussion on the technical and career opportunities tied to nanoscale science and engineering. These are exciting times in NSEF – we look forward to seeing you all in Minneapolis.

- Dr. Geoffrey D. Bothun, NSEF Chair

News and Announcements

NSEF Programming for 2017 AIChE Annual Meeting:

NSEF is pleased to announce many exciting scientific sessions at the 2017 Annual Meeting in Minneapolis, Minnesota from October 29th – November 3rd, 2017. Highlights of the programming activities are included below.

2017 NSEF Forum Plenary and Young Investigator Award Winner:

At the 2017 Annual Meeting in Minneapolis, NSEF will present **Dr. Daniel W. Pack** with the 2017 NSEF Forum Plenary for his work on non-viral gene delivery systems and **Dr. William A. Tisdale** with the 2017 NSEF Young Investigator Award for his work in colloidal semiconductor nanocrystals. The award winners will be highlighted in the NSEF Plenary Session at the AIChE Annual Meeting. Dr. Pack's talk will involve the "Mechanisms, Design and Fabrication of Non-Viral Gene Delivery Systems" and Dr. Tisdale's talk will be on "Disorder, Nonequilibrium Transport, and the Critical Role of Size Dispersion in Colloidal Semiconductor Nanomaterials" Their short bios are included below:

Professor Daniel W. Pack is the Ashland Inc. Chair in Chemical Engineering and Professor of Chemical & Materials Engineering and Pharmaceutical Sciences at the University of Kentucky. He graduated from the University of Illinois with a B.S. degree in Chemical Engineering in 1990 and earned his Ph.D., also in Chemical Engineering, with Prof. Frances H. Arnold at the California Institute of Technology in 1997. Pack was a NIH post-doctoral fellow with Robert Langer at the Massachusetts Institute of Technology during 1997-1998 before starting his independent career at the University of Illinois, Urbana-Champaign, in 1999. Pack

won a Faculty Early Career Development (CAREER) award from the NSF in 2002, he was a Beckman Fellow at the Center for Advanced Studies at UIUC in 2004-2005, and he received a Xerox Award for Faculty Research in 2008. Pack is an author of more than 80 peer-reviewed publications and is inventor on seven patents, several of which have been licensed and are being commercialized.



Will Tisdale joined the Department of Chemical Engineering at MIT in January, 2012, where he holds the rank of Associate Professor without Tenure and is currently the ARCO Career Development

Professor in Energy Studies. His research is focused on synthesis and spectroscopy of semiconductor nanomaterials. Will earned his B.S. in Chemical Engineering from the University of Delaware in 2005, his Ph.D. in Chemical Engineering from the University of Minnesota in 2010, and was a postdoc in the Research Laboratory of Electronics at MIT before joining the faculty in 2012. He is a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE), the DOE Early Career Award, the NSF CAREER Award, an Alfred P. Sloan Fellowship, the Camille Dreyfus Teacher-Scholar Award, and MIT's Everett Moore Baker Award for Excellence in Undergraduate Teaching.

2017 AIChE Annual Student Workshop

This year NSEF will take part in the student conference by hosting a panel discussion titled "Nanoscale Science & Engineering: Paving the Future of the Field," presented by Reginald Rogers, Samantha Meenach, and Geoff Bothun on Saturday, October 28, 2017. The panel discussion will take place 10:45 – 11:30 at the Minneapolis Convention Center – 101C/D/E.

New Book: Nanotechnology Commercialization – Manufacturing Processes and Products

This First book by NSEF is in production by Wiley and AIChE and is on pre-order at Amazon.com. The 12 Chapter Text Book is for release in October 2017.

* Editor-in-Chief: Dr. Tom Mensah

* Authors: Thomas Mensah, Ben Wang, Geoffrey Bothun, Jessica Winter, and Virginia Davis

NSEF Business Meeting:

For the first time, NSEF will have a business meeting to discuss all past, present, and future matters. The business meeting will take place on Tuesday, October 31st from 10:45 – 12:15 PM in Minneapolis Convention Center – 213A/B and is open to all NSEF members.

NSEF Reception:

NSEF invites all current members to attend the NSEF Reception at the AIChE Annual Meeting on Wednesday, November 1st from 7 - 9pm at the Hilton Minneapolis – Symphony IV. In addition to some wonderful food and beverages, announcements will be made for the NSEF Award winners, graduate student awards, and poster session awards. We hope to see you there!

2017 AIChE Annual Meeting Graduate Student Award Sessions:

NSEF is sponsoring two award sessions at the 2017 AIChE Annual Meeting in the areas of Bionanotechnology and Carbon Nanomaterials. These sessions honor graduate students whose research achievements are in these areas and who demonstrate a high level of excellence in their work. At the end of each session, a panel of judges will determine 1st - 3rd place awards. The two sessions will be held at the following times and locations:

- Carbon Nanomaterials: Monday, October 30th, 12:30 - 3:00 pm, Minneapolis Convention Center – 213A/B
- Bionanotechnology: Tuesday, October 31st, 8:00 - 10:30 am, Minneapolis Convention Center – 212A/B

2017 AIChE Annual Meeting NSEF Poster Session:

Also, the NSEF poster session will be Monday, October 30th from 3:15 – 4:45 pm in Minneapolis Convention Center – Exhibit Hall B. Over 30 high quality posters addressing fundamental science and engineering issues associated with nanoscale science, engineering and technology will be presented. The poster session will be judged, and student awards will be given to the best three posters.

Summary of Programming Activities

Sunday, October 29th:

3:30pm - 6:00pm:

- 17: Bionanotechnology for Gene and Drug Delivery I
- 42: Self and Directed Assembly at the Nanoscale

Monday, October 30th:

8:00am - 10:30am:

- 56: Bionanotechnology for Gene and Drug Delivery II
- 62: Division Plenary: Chemical Engineering Principles for Nanotechnology (Invited Talks)

12:30pm - 3:00pm:

- 128: Biochemical & Biotechnology U.G. Research Session (Invited Talks)

- 131: Carbon Nanomaterials Graduate Student Award Session
- 152: In Honor of Stuart W. Churchill I (Invited Talks)
- 166: Nanomaterials Manufacturing
- 176: Solve this! Fundamental Approach to Problem Solving in Industrial Processes I (Invited Talks)

3:15pm - 4:45pm:

- 201: Poster Session: Nanoscale Science and Engineering

Tuesday, October 31st:

8:00 - 10:30am:

- 268: Bionanotechnology Graduate Student Award Session
- 287: Graphene 2-D Materials: Synthesis, Functions and Applications I

12:30 - 3:00pm:

- 331: Area Plenary: Bionanotechnology I (Invited Talks)
- 361: Graphene 2-D Materials: Synthesis, Functions and Applications II

3:15 - 5:45pm:

- 410: Area Plenary: Bionanotechnology II (Invited Talks)
- 445: Phase Behavior, Rheology, and Processing of Nanoparticle Suspensions and Solutions

Wednesday, November 1st:

8:00 - 10:30am:

- 485: Graphene and Carbon Nanotubes: Absorption, Separations, and Transport Processes
- 496: Nanotechnology for Biotechnology and Pharmaceuticals

12:30 - 3:00pm:

- 557: Graphene and Carbon Nanotubes: Characterization, Functionalization, and Dispersion
- 559: Nanobiotechnology for Sensors and Imaging I

3:15 - 5:45pm:

- 615: Nanobiotechnology for Sensors and Imaging II
- 616: Nanofabrication and Nanoscale Processing

Thursday, November 2nd:

8:00 - 10:30am:

- 676: Nanoscale Science and Engineering in Biomolecular Catalysis I
- 686: Self-Assembled Biomaterials

12:30 - 3:00pm:

- 727: Nanoscale Science and Engineering in Biomolecular Catalysis II
- 729: Nanostructured Biomimetic and Biohybrid Materials and Devices

Member Awards & Highlights

If you have a recent high impact publication, honor, or award that you would like to have highlighted in the NSEF Newsletter please submit these to the Newsletter Editor at roxbury@uri.edu.

Upcoming Events

Pan American Congress of Nanotechnology

November 27 - 30, 2017 in Guarujá, Brazil

<http://www.panamericannano2017.com/>

TechConnect Nanotech 2018 Conference & Expo

May 13 - 16, 2018 in Anaheim, CA

<http://www.techconnectworld.com/Nanotech2017/>

Membership Column

Not a member of AIChE or NSEF? In order to guarantee that you are included in our current email list so

that you will have updated access to NSEF materials and award eligibility make sure you are a current NSEF and AIChE member. NSEF membership is an additional \$10/year to the AIChE membership. You can follow the steps of one of the following options below to join:

1. Visit AIChE's membership website to sign up online: <http://www.aiche.org/membership>
2. Download the following file from the AIChE website: Membership Application PDF and send your application and payment directly to AIChE.

2017-18 NSEF Leadership

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