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Orlov and Kristina
Wagstrom

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Dear Environmental Division Members,



I am excited to welcome you all to our newly designed newsletter for the Environmental Division! The Division is actively working with volunteers to bring you news, information, and updates regarding the Division's activities. I would like to congratulate the Cecil Award Winner, Dr. Bhavik Bakshi from Ohio State University for his numerous contributions towards the development of theoretical and practical solutions towards environmental sustainability. I would also like to congratulate Dr. Kerry Kelly from University of Utah for winning the Environmental Division's Early Career Award for her contributions towards mitigating air quality challenges. In this edition, you will also find the lineup of sessions for the AIChE Annual Meeting in Orlando, 2019. As always, we are seeking active volunteers for the Environmental Division, so if you or a colleague you know is interested in getting involved, please send an email to the membership committee. Hope to serve the community and make us stronger!

Best Wishes,
Debalina Sengupta

Congratulations to the Lawrence K. Cecil and Early Career Award Winners

2019 Lawrence K. Cecil Award Winner: Dr. Bhavik R. Bakshi, Richard M. Morrow Professor, Ohio State University



Dr. Bhavik R. Bakshi is the Richard M. Morrow Professor of Chemical and Biomolecular Engineering at The Ohio State University. He received his B.Chem.Eng. degree from the Institute of Chemical Technology in Mumbai, India and his MSCEP and PhD degrees from the Massachusetts Institute of Technology. His research is in the area of Sustainable Engineering which is resulting in systematic methods for developing products and processes that make positive contributions to human well-being while being economically feasible and respecting nature's limits. He has recently authored a textbook on Sustainable Engineering and is on the editorial boards of several multidisciplinary journals.

In addition to university courses, he co-teaches short courses on Sustainable Engineering at several institutions including MIT and IIT-Bombay. His awards include the Ted Peterson student paper award from the CAST division of AIChE, the CAREER award from the National Science Foundation, a Distinguished Alumnus award from ICT, the Research Excellence and Education awards from the Sustainable Engineering Forum of AIChE, and the Lawrence K. Cecil Award from the Environmental division of AIChE.

2019 Early Career Award Winner: Dr. Kerry Kelly, Assistant Professor University of Utah, Dept. of Chemical Engineering



Dr. Kerry Kelly is an Assistant Professor in Chemical Engineering at the University of Utah. Her research focuses on the links between energy, air quality and human health. She received a B.S. in Chemical Engineering from Purdue University, a M.S. in Environmental Engineering from the University of North Carolina-Chapel Hill, and a PhD in Environmental Engineering from the University of Utah. Her research is motivated by local and regional air-quality challenges. Dr. Kelly served 8 years on Utah's Air Quality Board, and currently serves on Utah's Air Quality Policy Board. Her research includes projects to understand the links between combustion particle properties

and their health effects, to develop the next-generation of low-cost particulate matter sensors, to develop real-time estimates of particulate matter concentration and uncertainty, and to help engage high-school and middle-school students as citizen scientists.

2019 Graduate Student Paper Award

1st Place Winner: Chelsea Clark, Rice University

Clark, C.A., Heck, K.N., Powell, C.D., Wong, M.S. (2019) Highly Defective UiO-66 Materials for the Adsorptive Removal of Perfluorooctanesulfonate. ACS Sustainable Chem. Eng. 7, 7, 6619-6628. <https://doi.org/10.1021/acssuschemeng.8b05572>

2nd Place Winner: Nathan Janecek, University of Iowa

Janecek, N.J., Marek, R.F., Bryngelson, N., Singh, A., Bullard, R.L., Brune, W.H., Stanier, C.O. (2019) Physical Properties of Secondary Photochemical Aerosol from OH Oxidation of a Cyclic Siloxane. Atmos. Chem. Phys. 19, 1649-1664. <https://doi.org/10.5194/acp-19-1649-2019>

3rd Place Winner: Jiayu Li, Washington University in St. Louis

Li, J., Li, H., Ma, Y., Wang, Y., Abokifa, A.A., Lu, C., Biswas, P. (2018) Spatiotemporal Distribution of Indoor Particulate Matter Concentration with a Low-cost Sensor Network. Building and Environment. 127, 138-147. <https://doi.org/10.1016/j.buildenv.2017.11.001>

AIChE National Meeting Schedule

Sunday, November 10th, 2019

3:30 PM – 6:00 PM

24 Fundamentals of Food, Energy, and Water Systems (@ Hyatt Regency Orlando – Blue Spring I/II)

Kirti M. Yenkie, Chemical Engineering, Rowan University, Glassboro, NJ and *Debalina Sengupta*, Texas A&M University, College Station, TX

Monday, November 11th, 2019

08:00 AM – 8:25 AM

68a Keynote Presentation (@ Hyatt Regency Orlando – Challenger 41/42)

Monica C. Regalbufo, Idaho National Laboratory

08:00 AM - 10:30 AM

57 Carbon Dioxide Capture technologies and Their Use (@ Hyatt Regency Orlando – Rainbow Spring I/II)

Sunil Hangal, Environmental Compliance Assurance Management (ECAM), Bedminster, NJ and *Ángel Galán Martín*, Centre for Process Systems Engineering, Imperial College of Science, Technology and Medicine, London, United Kingdom

68 Division Plenary: Chemical Engineering Roles in U.S. Department of Energy Environmental Management and Waste Cleanup Programs (Invited Talks) (@ Hyatt Regency Orlando – Challenger 41/42)

Thong Hang, Savannah River National Laboratory, Aiken, SC and *Debalina Sengupta*, Gas and Fuels Research Center, Texas A&M Engineering Experiment Station, College Station, TX

76 Fundamentals of Environmental Kinetics and Reaction Engineering (@ Hyatt Regency Orlando – Blue Spring I/II)

Hyun-Tae Hwang, Chemical and Materials Engineering, University of Kentucky, Paducah, KY and *Gerardo J. Ruiz-Mercado*, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH

12:30 PM – 03:00 PM

139 Environmental Division Awards and Honors (Invited Talks) (@ Hyatt Regency Orlando – Blue Spring I/II)

Debalina Sengupta, Texas A&M University, College Station, TX and *Sally Ng*, Georgia Tech

165 Career Paths: Perspectives by Minority Professionals in Chemical Engineering (@ Hyatt Regency Orlando – Regency Ballroom O)

Quinta Warren, Energy Research Consulting, Washington, DC and *Sipho C. Ndlela*, AEFA Inc., Beverly Hills, CA

166 Sustainable Management and Uses of Post-Consumer Materials and Waste (@ Hyatt Regency Orlando – Regency Ballroom U)

Jason Tremblay, Ohio University, Athens, OH and *Gerardo J. Ruiz-Mercado*, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH

03:30 PM – 06:00PM

209 Fundamentals of Sustainability Science and Engineering (@ Hyatt Regency Orlando – Blue Spring I/II)

Bhavik R. Bakshi, William G. Lowrie Department of Chemical and Biomolecular Engineering, The Ohio State University, Columbus, OH and **Heriberto Cabezas**, Institute for Process Systems Engineering and Sustainability, Pazmany Peter Catholic University, Budapest, Hungary

Tuesday, October 30th, 2018

08:00AM – 10:30AM

241 Advances in Life Cycle Optimization for Process Development (@ Hyatt Regency Orlando – Blue Spring I/II)

Debalina Sengupta, Texas A&M University, College Station, TX and **Gonzalo Guillén-Gosálbez**, Department of Chemical Engineering, Imperial College London, London, United Kingdom

11:00 AM - 12:30 PM

304 Meet the Innovators: Transforming the Future through Chemical Engineering (Invited Talks) (@ Hyatt Regency Orlando – Plaza International Ballroom G)

Venkat R. Bhethanabotla, Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, FL and **Richard Dickinson**, CBET, National Science Foundation, Arlington, VA

12:30PM – 03:00PM

309 Advances in Nuclear and Hazardous Waste Processing and Disposal (@ Hyatt Regency Orlando – Discovery 43)

Thong Hang, Savannah River National Laboratory, Aiken, SC, **Dan P. Lambert**, Process Technology Programs, Savannah River National Laboratory, Aiken, SC and **Robert W. Peters**, University of Alabama at Birmingham, Birmingham, AL

332 Fundamentals and Applications for Hazardous Waste Treatment (@ Hyatt Regency Orlando – Blue Spring I/II)

Ramesh Chawla, Chemical Engineering, Howard University, Washington, DC, **Dr. Robert W. Peters**, Civil, Construction, and Environmental Engineering, University of Alabama at Birmingham, Birmingham, AL and **Matthew L. Alexander**, Chemical Engineering, Texas A&M University-Kingsville, Kingsville, TX

03:30PM – 06:00PM

397 Conversion of Solid Wastes to Energy and/or Product (@ Hyatt Regency Orlando – Regency Ballroom Q)

Zheng Liu, SABIC AMERICAS, Sugar Land, TX, **Hsi-Wu Wong**, Department of Chemical Engineering, University of Massachusetts Lowell, Lowell, MA and **Michael Tai**, Archer Daniels Midland Company (ADM)

405 Fundamentals and Applications for Municipal Solid Waste Treatment and Valorization (@ Hyatt Regency Orlando – Blue Spring I/II)

Dr. Robert W. Peters, Civil, Construction, and Environmental Engineering, University of Alabama at Birmingham, Birmingham, AL, **Eunsung Kan**, Texas A&M AgriLife Research Center, Stephenville, TX and **Matthew L. Alexander**, Chemical Engineering, Texas A&M University-Kingsville, Kingsville, TX

Wednesday, November 13th, 2019

08:00AM – 10:30AM

445 Atmospheric Chemistry and Physics: Laboratory Studies (@ Hyatt Regency Orlando – Blue Spring I/II)

Shunsuke Nakao, Clarkson University, Potsdam, NY, **Kristina Wagstrom**, Chemical and Biomolecular Engineering, University of Connecticut, Storrs, CT and **Marwa El-Sayed**, Colorado State

459 Environmentally Friendly Product and Process Development for Sustainability (@ Hyatt Regency Orlando – Bayhill 18)

Qiang Xu, chemical engineering, Lamar university, TX, **Onkar Manjrekar**, Process research and Development, AbbVie, North Chicago, IL and **Deboleena Chakraborty**, Process Sciences, Core R&D, The Dow Chemical Company, Midland, MI

488 Sustainable Fuel from Renewable Resources (@ Hyatt Regency Orlando – Rainbow Spring I/II)

Hyun-Tae Hwang, Chemical and Materials Engineering, University of Kentucky, Paducah, KY and **Gerardo J. Ruiz-Mercado**, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH

12:30PM – 03:00PM

503 Atmospheric Chemistry and Physics: Modeling and Field Studies (@ Hyatt Regency Orlando – Blue Spring I/II)

Shunsuke Nakao, Clarkson University, Potsdam, NY, **Kristina Wagstrom**, Chemical and Biomolecular Engineering, University of Connecticut, Storrs, CT and **Marwa El-Sayed**, Colorado State

512 Community-Based Water Treatment Innovations (@ Hyatt Regency Orlando – Rainbow Spring I/II)

Steven T. Weinman, Chemical and Biological Engineering, The University of Alabama, Tuscaloosa, AL and **Sage R. Hiibel**, Civil and Environmental Engineering, University of Nevada Reno, Reno, NV

03:30PM – 05:00PM

562 Poster Session: Environmental Division (@ Hyatt Regency Orlando – Regency Ballroom R/S)

Jeffrey R. Seay, Chemical and Materials Engineering, University of Kentucky, Paducah, KY, **Sage R. Hiibel**, Civil and Environmental Engineering, University of Nevada Reno, Reno, NV and **Debalina Sengupta**, Texas A&M University, College Station, TX

03:30PM – 06:00PM

587 Integrated Process Engineering and Economics Analysis (@ Hyatt Regency Orlando – Regency Ballroom Q)

Yizu Zhu, SABIC, Sugar Land, TX, **Julie N. Renner**, Chemical and Biomolecular Engineering, Case Western Reserve University, Cleveland, OH and **Mike Dou**, ExxonMobil Research and Engineering, Spring, TX

Thursday, November 14th, 2019

08:00AM – 10:30AM

620 Advanced Treatment for Water: Reuse and Recycling (@ Hyatt Regency Orlando – Rainbow Spring I/II)

Sage R. Hiibel, *Civil and Environmental Engineering, University of Nevada Reno, Reno, NV* and **M. Toufiq Reza**,
UNR

634 CO₂ Industrial, Engineering and R&D Approaches (@ Hyatt Regency Orlando – Blue Spring I/II)

Kevin C. Leonard, *Chemical & Petroleum Engineering, The University of Kansas, Lawrence, KS* and **Gonzalo Guillén-Gosálbez**, *Department of Chemical Engineering, Imperial College London, London, United Kingdom*

661 Sustainability and Consumer Products (@ Hyatt Regency Orlando – Regency Ballroom V)

William M. Barrett, *U.S. Environmental Protection Agency, Cincinnati, OH*

12:30PM – 03:00PM

670 Advanced Treatment for Water: Advanced Oxidation Processes (@ Hyatt Regency Orlando – Regency Spring I/II)

Sage R. Hiibel, *Civil and Environmental Engineering, University of Nevada Reno, Reno, NV* and **M. Toufiq Reza**,
Mechanical Engineering, Ohio University, Athens, OH

685 Going to a Decision Point in Sustainability Analysis (@ Hyatt Regency Orlando – Blue Spring I/II)

Madhav Ghanta, *SABIC* and **Ángel Galán Martín**, *Centre for Process Systems Engineering, Imperial College of Science, Technology and Medicine, London, United Kingdom*

03:30PM- 06:00PM

744 Sustainability Metrics at the Process and Product Level (@ Hyatt Regency Orlando – Blue Spring I/II)

Carlos Pozo Fernández, *Department of Chemical Engineering, Imperial College London, London, United Kingdom*, **Larry Erickson**, *Department of Chemical Engineering, Kansas State University, Manhattan, KS* and **Yinlun Huang**,
Department of Chemical Engineering and Materials Science, Wayne State University, Detroit, MI

Friday, November 15th, 2019

08:00AM – 10:30AM

752 Applied Math for Energy and Environmental Applications (@ Hyatt Regency Orlando – Celebration 3)

Ping He, *Mechanical Engineering, Lamar University, Beaumont, TX*, **Kirti M. Yenkie**, *Chemical Engineering, Rowan University, Glassboro, NJ*, **Fernando V. Lima**, *Department of Chemical and Biomedical Engineering, West Virginia University, Morgantown, WV*, **Johannes Jäschke**, *Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway* and **Gaurav Mirlekar**, *National Energy Technology Laboratory, Morgantown, WV*

Announcements:

Updated Environmental Division Webpage

The Environmental Division would like to encourage everyone to check out the newly updated webpage for the division. The webpage is a great place to find important division information, announcements, and archives of the division newsletters.

<https://www.aiche.org/community/sites/divisions-forums/environmental-division>

Division Dinner at the AIChE meeting, tickets are still available

Tickets are still available for the Management Division, Environmental Division and the Law Forum Group Dinner, that will take place during the AIChE Annual meeting in Orlando. The dinner will take place on 11/12/2019 at 7 pm at Cuba Libre Restaurant and Rum Bar.

Upcoming Division Elections

Election slate will be posted soon, please vote!