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a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER 404-727-6548

RPPR Final Report

as of 01-Nov-2018

Agency Code:

Proposal Number: 73261CHCF

Agreement Number: W911NF-18-1-0165

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EIN: 050300482

Report Date: 03-Dec-2018

Date Received: 12-Sep-2018

Final Report for Period Beginning 03-May-2018 and Ending 03-Sep-2018

Title: 2018 Systems Chemistry Gordon Research Conferences

Begin Performance Period: 03-May-2018

End Performance Period: 03-Sep-2018

Report Term: 0-Other

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Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees:

STEM Participants:

Major Goals: The main difference between man-made processes and products and those found in the living world is that the former are typically passive and static while the latter are active and dynamic. Life is the product of complex systems of molecular reactions; connections and interactions giving rise to a highly dynamic and functional whole. While research into the nature of complex systems is by now well established in some related scientific disciplines (e.g., physics, biology, computer science), chemistry embraced a "systems" view only very recently. It is now possible that the ability to control such dynamic chemical systems may pave the way to understanding the emergence of function in early evolution, and consequently, for the design and preparation of functional biomimetic systems as complex as artificial cells and tissues. Furthermore, it is anticipated that developing such systems can deliver, in the short and long term, radically different approaches in areas ranging from materials science to evolvable biologics for medicine. The design and study of complex systems, i.e., of dynamic, self-organized, multi-component chemical networks, has been integrated under the umbrella of the recently inaugurated discipline of Systems Chemistry.

This first conference offered a much-needed international venue for presenting and discussing breakthrough results in systems chemistry, for sharing new emerging methodology, and for refinement of the ideas coherently across these rapidly emerging new research directions. With the recent advances in instrumentation and analytical tools, complex chemical systems are opening new approaches for the construction and design of dynamic mesoscale materials. Coherence remains limited by the diversity of disciplines involved, with chemistry, physics, bio-engineering and structural biology scientists all independently converging on the central topic of complex chemical systems. This diversity applies equally to scientists from communities studying (i) supramolecular chemistry, (ii) origins of life, and (iii) far-from-equilibrium systems. A confluence of these fields could catalyze the rise of new emergent functions not apparent in the system's components.

Accomplishments: Report Uploaded

Training Opportunities: Speakers, discussion leaders, poster presenters and attendees simultaneously contributed to and benefited from the collective skills and experience shared throughout the conference.

Results Dissemination: The final program has been posted on the GRC website.

Honors and Awards: Nothing to Report

RPPR Final Report
as of 01-Nov-2018

Protocol Activity Status:

Technology Transfer: Nothing to Report



GORDON RESEARCH CONFERENCES

FINAL PROGRESS REPORT

Army Research Office
Systems Chemistry GRC

Grant Number W911NF-18-1-0165

July 29-August 3, 2018

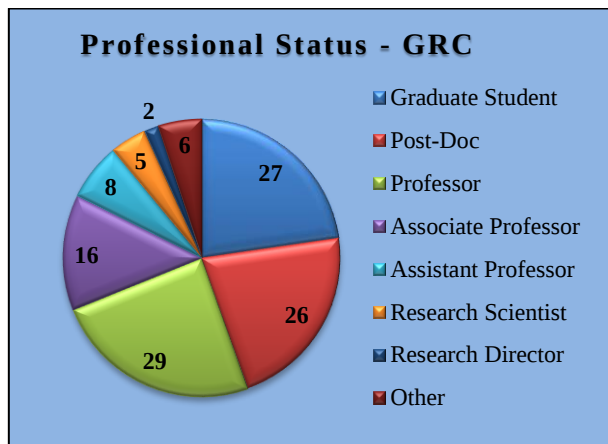
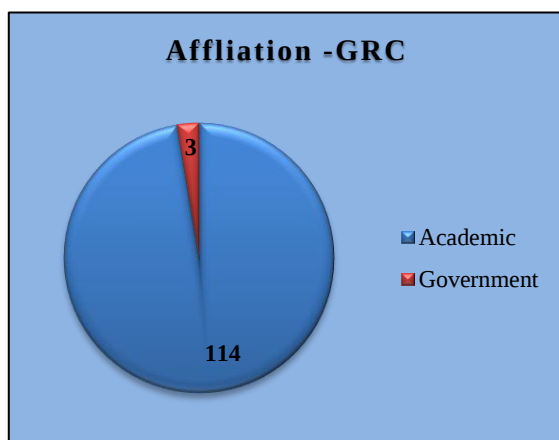
Operational Summary

The Gordon Research Conference (GRC) on Systems Chemistry was held at the Jordan Hotel at Sunday River in Newry, Maine from July 29-August 3, 2018. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.



Conference Participants

The Conference was well-attended with 119 participants. Scientists from academia represented 96% of the participants while attendees from government accounted for 3%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 45% of all attendees. Approximately 30% of the participants at the 2018 meeting were women.



Conference Program

The main difference between man-made processes and products and those found in the living world is that the former are typically passive and static while the latter are active and dynamic. Life is the product of complex systems of molecular reactions; connections and interactions giving rise to a highly dynamic and functional whole. While research into the nature of complex systems is by now well established in some related scientific disciplines (*e.g.*, physics, biology, computer science), chemistry embraced a "systems" view only very recently. It is now possible that the ability to control such dynamic chemical systems may pave the way to understanding the emergence of function in early evolution, and consequently, for the design and preparation of functional biomimetic systems as complex as artificial cells and tissues. Furthermore, it is anticipated that developing such systems can deliver, in the short and long term, radically different approaches in areas ranging from materials science to evolvable biologics for medicine. The design and study of complex systems, *i.e.*, of dynamic, self-organized, multi-component chemical networks, has been integrated under the umbrella of the recently inaugurated discipline of Systems Chemistry.

This first conference offered a much-needed international venue for presenting and discussing breakthrough results in systems chemistry, for sharing new emerging methodology, and for refinement of the ideas coherently across these rapidly emerging new research directions. With the recent advances in instrumentation and analytical tools, complex chemical systems are opening new approaches for the construction and design of dynamic mesoscale materials. Coherence remains limited by the diversity of disciplines involved, with chemistry, physics, bio-engineering and structural biology scientists all independently converging on the central topic of complex chemical systems. This diversity applies equally to scientists from communities studying (i) supramolecular chemistry, (ii) origins of life, and (iii) far-from-equilibrium systems. A confluence of these fields could catalyze the rise of new emergent functions not apparent in the system's components.

Conference Budget

Funding provided by the Army Research Office supported partial registration for 6 postdocs, 2 graduate students, 1 professor, and 1 assistant professor at the GRC.

Conference Feedback

Participants had an opportunity to provide feedback at the end of the Conference. The feedback collected from the meeting was extremely positive. Evaluations included numerous positive remarks regarding the diversity of topics, the poster sessions and the high quality of talks.

GRC would like to thank the Army Research Office for its continued support of the meetings. The contributions received have been critical to the success of the conferences and are having a measurable impact in advancing the frontiers of science worldwide.

Dr. David Lynn, GRC Chair
Emory University

Dr. Gonen Ashkenasy, GRC Co-Chair
Ben-Gurion University of the Negev

Dr. Nancy Ryan Gray
President and Chief Executive Officer
Gordon Research Conferences

Systems Chemistry
Gordon Research Conference
Systems Chemistry from Concepts to Conception
July 29 - August 3, 2018

Chairs David G. Lynn and Gonen Ashkenasy
Vice Chairs Sijbren Otto and Rein V. Ulijn

Conference Program

Sunday

2:00 pm - 9:00 pm	Arrival and Check-in
6:00 pm - 7:00 pm	Dinner
7:30 pm - 7:40 pm	Introductory Comments by GRC Site Staff / Welcome from the GRC Chair
7:40 pm - 9:30 pm	Keynote Session: Bottom-up Construction of Complex Chemical Systems Discussion Leader: David Lynn (Emory University, USA)
7:40 pm - 7:50 pm	Opening Remarks
7:50 pm - 8:20 pm	Jo Handelsman (Wisconsin Institute for Discovery, USA) "Understanding Diversity in Microbial Communities"
8:20 pm - 8:30 pm	Discussion
8:30 pm - 9:00 pm	Sara Walker (Arizona State University, USA) "New Physics from Systems Chemistry: Realizing the Goal to Understand the 'Laws of Life'"
9:00 pm - 9:10 pm	Discussion
9:10 pm - 9:30 pm	General Discussion

Monday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Alternative Genetic Systems Discussion Leader: Martha Grover (Georgia Institute of Technology, USA)
9:00 am - 9:30 am	Philipp Holliger (MRC Laboratory of Molecular Biology, University of Cambridge, United Kingdom) "RNA Polymerase Ribozymes and the Primordial RNA 'Genome'"
9:30 am - 9:40 am	Discussion
9:40 am - 10:10 am	Dieter Braun (Ludwig Maximilian University of Munich, Germany) "Molecular Evolution in Microscale Experiments"
10:10 am - 10:20 am	Discussion
10:20 am - 10:35 am	Jennifer Heemstra (Emory University, USA) "Harnessing Nucleic Acid Molecular Recognition and Self-Assembly for Small-Molecule Biosensing"
10:35 am - 10:40 am	Discussion
10:40 am - 11:10 am	Coffee Break
11:10 am - 11:40 am	John Chaput (University of California, Irvine, USA) "Synthetic Biology Using Xeno-Nucleic Acids"
11:40 am - 11:50 am	Discussion
11:50 am - 12:20 pm	Henderson Cleaves (Earth-Life Science Institute, Japan) "The Prebiotic Small Molecule Inventory"

12:20 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
3:00 pm - 4:00 pm	Power Hour <i>The GRC Power Hour is an optional informal gathering open to all meeting participants. It is designed to help address the challenges women face in science and support the professional growth of women in our communities by providing an open forum for discussion and mentoring.</i> Organizers: Jennifer Heemstra (Emory University, USA) and Martha Grover (Georgia Institute of Technology, USA)
4:00 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	Compartmentalized and Catalytic Chemical Networks Discussion Leader: Kepa Ruiz-Mirazo (University of the Basque Country, Spain)
7:30 pm - 8:00 pm	Christine Keating (Pennsylvania State University, USA) "Complex Coacervation of RNA/Peptide Systems"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:40 pm	Neal Devaraj (University of California, San Diego, USA) "De Novo Vesicle Formation and Reproduction"
8:40 pm - 8:50 pm	Discussion
8:50 pm - 9:20 pm	Ivan Korendovych (Syracuse University, USA) "Self-Assembled Peptide Catalysts"
9:20 pm - 9:30 pm	Discussion
Tuesday	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Autocatalysis, Self-Replication and Replication Networks Discussion Leader: Ignacio Alfonso (Institute of Advanced Chemistry of Catalonia, CSIC, Spain)
9:00 am - 9:30 am	Kenso Soai (Tokyo University of Science, Japan) "Autocatalysis and the Origin of Homochirality"
9:30 am - 9:40 am	Discussion
9:40 am - 10:10 am	Douglas Philp (Northwestern University, USA) "In Through the Out Door: Creating Instructable and Dynamic Reaction Networks Using Synthetic Replicators"
10:10 am - 10:20 am	Discussion
10:20 am - 10:35 am	Doron Lancet (Weizmann Institute of Science, Israel) "Systems Protobiology: Could Compositional Lipid Catalytic Networks Be the First Replicators?"
10:35 am - 10:40 am	Discussion
10:40 am - 11:10 am	Coffee Break
11:10 am - 11:40 am	Niles Lehman (Portland State University, USA) "Scrambling to Make the RNA World"
11:40 am - 11:50 am	Discussion
11:50 am - 12:05 pm	Martha Grover (Georgia Institute of Technology, USA)

"Prediction and Emergence: The Power of Simulation for Complex Systems Analysis"

12:05 pm - 12:10 pm Discussion

12:10 pm - 12:25 pm **Nathaniel Wagner** (Ben-Gurion University of the Negev, Israel)

"Using Replication Networks to Model Systems Complexification and Evolutionary Dynamics"

12:25 pm - 12:30 pm Discussion

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm Nucleic Acid Systems Chemistry

Discussion Leader: **Jennifer Heemstra** (Emory University, USA)

7:30 pm - 8:00 pm **Rebecca Schulman** (Johns Hopkins University, USA)

"How Can We Build a Biochemical 'Operating System'?"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:40 pm **Andrew Ellington** (University of Texas at Austin, USA)

"Novel Systems Based on the Programmability of Nucleic acid Conformers"

8:40 pm - 8:50 pm Discussion

8:50 pm - 9:05 pm **Rong Ni** (Hong Kong University of Science and Technology, Hong Kong SAR China)

"Peptide/DNA Co-Assembled Virus Biomimetics"

9:05 pm - 9:10 pm Discussion

9:10 pm - 9:25 pm **Constantin Giurgiu** (Harvard University, USA)

"The Regioselectivity of Chemical RNA Copying"

9:25 pm - 9:30 pm Discussion

Wednesday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm Dynamic Functional Materials

Discussion Leader: **Bing Xu** (Brandeis University, USA)

9:00 am - 9:30 am **Ivan Aprahamian** (Dartmouth College, USA)

"Structurally Simple Adaptive Functional Materials"

9:30 am - 9:40 am Discussion

9:40 am - 10:10 am **Raymond Astumian** (University of Maine, USA)

"Adaptation Away from Equilibrium: Kinetics and Thermodynamics of Catalysis Driven Steady-States"

10:10 am - 10:20 am Discussion

10:20 am - 10:35 am **Ignacio Alfonso** (Institute of Advanced Chemistry of Catalonia, CSIC, Spain)

"Dynamic Pseudopeptidic Disulfides: From Complexity to Applications"

10:35 am - 10:40 am Discussion

10:40 am - 11:10 am Group Photo / Coffee Break

11:10 am - 11:40 am **Rein Ulijn** (Advanced Science Research Center, Graduate Center, CUNY, USA)

"Active and Reactive Peptide Ensembles"

11:40 am - 11:50 am Discussion

11:50 am - 12:20 pm **Christoph Flamm** (University of Vienna, Austria)

"Computational Systems Chemistry"

12:20 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 5:30 pm	Poster Session
5:30 pm - 7:30 pm	Energy Dissipation in Dynamic Systems Discussion Leader: Jay Goodwin (Emory University / MacArthur Foundation, USA)
5:30 pm - 6:00 pm	Rafal Klajn (Weizmann Institute of Science, Israel) "Constructing Chemical Reaction Networks with Nanoparticulate Building Blocks"
6:00 pm - 6:10 pm	Discussion
6:10 pm - 6:40 pm	Leonard Prins (University of Padova, Italy) "Energy Dissipation in Chemical-Fuel Driven Self-Assembly"
6:40 pm - 6:50 pm	Discussion
6:50 pm - 7:05 pm	Thomas Hermans (University of Strasbourg, France) "Emergent Properties in Chemically Fueled Supramolecular Polymers"
7:05 pm - 7:10 pm	Discussion
7:10 pm - 7:25 pm	Jerzy Maselko (University of Alaska Anchorage, USA) "Controlling Growth of Architectures and Behaviors of Complex Chemical Organisms"
7:25 pm - 7:30 pm	Discussion
8:00 pm - 9:00 pm	Dinner

Thursday

7:30 am - 8:30 am	Breakfast
8:30 am - 9:00 am	Business Meeting <i>Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair</i>
9:00 am - 12:30 pm	Chemical Reactivity Far from Equilibrium Discussion Leader: Agota Toth (University of Szeged, Hungary)
9:00 am - 9:30 am	Irving Epstein (Brandeis University, USA) "Nonlinear, Dynamic Behavior in Time and Space"
9:30 am - 9:40 am	Discussion
9:40 am - 10:10 am	Annette Taylor (University of Sheffield, United Kingdom) "Catalytic Reaction Networks Coupled with Mass Transport"
10:10 am - 10:20 am	Discussion
10:20 am - 10:35 am	Pavan Bosukonda (University of Bristol, United Kingdom) "Enzyme-Powered Motility in Buoyant Organoclay/DNA Protocells"
10:35 am - 10:40 am	Discussion
10:40 am - 11:10 am	Coffee Break
11:10 am - 11:40 am	Ognjen Miljanic (University of Houston, USA) "Reversibility: From Messy Mixtures to Ordered Materials"
11:40 am - 11:50 am	Discussion
11:50 am - 12:05 pm	Bing Xu (Brandeis University, USA)

"The Emergent Molecular Properties of Peptides"

12:05 pm - 12:10 pm Discussion

12:10 pm - 12:25 pm **Yifei Zhang** (Columbia University, USA)

"Complex Reaction Dynamics and Hydrodynamics from a Two-Enzyme Reaction Network"

12:25 pm - 12:30 pm Discussion

12:30 pm - 1:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm - 7:00 pm Dinner

7:30 pm - 9:30 pm Future of Systems Chemistry

Discussion Leader: **Gonen Ashkenasy** (Ben-Gurion University of the Negev, Israel)

7:30 pm - 7:45 pm **Olga Taran** (Emory University, USA)

"Systems Chemistry of Plant-Bacteria Signaling in the Rhizosphere"

7:45 pm - 7:50 pm Discussion

7:50 pm - 8:05 pm **Peter Strazewski** (University of Lyon, France)

"Population Growth and Encoding Principles in Self-Evolving Chemical Systems"

8:05 pm - 8:10 pm Discussion

8:10 pm - 8:40 pm **Jan van Esch** (Technical University of Delft, The Netherlands)

"Far-from-Equilibrium Phenomena in Molecular Systems"

8:40 pm - 8:50 pm Discussion

8:50 pm - 9:20 pm **Sijbren Otto** (University of Groningen, The Netherlands)

"Towards *De Novo* Life: From Self-Replication to Energy Dissipation and a Proto-Metabolism"

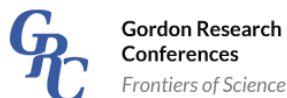
9:20 pm - 9:30 pm Discussion

Friday

7:30 am - 8:30 am Breakfast

9:00 am Departure

Contributors



Systems Chemistry GRC Registration List

Name	Organization	Participation
Alfonso, Ignacio	Institute of Advanced Chemistry of Catalonia, CSIC	Speaker
Aprahamian, Ivan	Dartmouth College	Speaker
Arranz Gibert, Pol	Yale University	Poster Presenter
Ashkenasy, Gonen	Ben-Gurion University of the Negev	Chair
Astumian, Raymond D	University of Maine	Speaker
Beldjoudi, Yassine	Northwestern University	Poster Presenter
Bian, Tong	Weizmann Institute of Science	Poster Presenter
Bocanegra, Jessica L	University of Vermont	Poster Presenter
Bohne, Cornelia	University of Victoria	Poster Presenter
Bosukonda, Pavan Kumar	University of Bristol	Speaker
Braun, Dieter	Ludwig Maximilian University of Munich	Speaker
Brea Fernandez, Roberto J	University of California, San Diego	Poster Presenter
Bullara, Domenico	Brandeis University	Poster Presenter
Campbell, Joseph P	University of Vermont	Poster Presenter
Cen, Siying	Emory University	Attendee
Chaput, John	University of California, Irvine	Speaker
Childers, W. Seth	University of Pittsburgh	Poster Presenter
Chiu, Melanie	SUNY Stony Brook	Poster Presenter
Cissé, Nicolas	University of Twente	Poster Presenter
Clark, Benton C	Space Science Institute	Attendee
Cleaves, Henderson J	Earth-Life Science Institute	Speaker
Colomer, Ignacio	University of Oxford	Poster Presenter
das, sambeeta	University of Pennsylvania	Attendee
Das, Dibyendu	Indian Institute of Science Education and Research IISER Kolkata	Poster Presenter
De, Soumen	Weizmann Institute of Science	Poster Presenter
De La Escosura, Andres	Universidad Autonoma de Madrid	Poster Presenter
Devaraj, Neal K	University of California, San Diego	Speaker
Ellington, Andrew D	University of Texas at Austin	Speaker
Epstein, Irving R	Brandeis University	Speaker
Fan, Bowen	Delft University of Technology	Poster Presenter
Feng, Yuanning	Northwestern University	Poster Presenter
Flamm, Christoph	University of Vienna	Speaker
Gagnon, Jean-Sebastien	Harvard University/Castleton University/Community College of Vermont	Poster Presenter
Gibbs, Julianne M	University of Alberta	Poster Presenter
Giurgiu, Constantin	Harvard University	Speaker
Goodwin, Jay T.	Emory University / MacArthur Foundation	Discussion Leader
Grover, Martha A	Georgia Institute of Technology	Speaker
Handelsman, Jo	Wisconsin Institute for Discovery	Speaker
Hanopolskyi, Anton I	Weizmann Institute of Science	Poster Presenter
Heemstra, Jennifer	Emory University	Speaker
Hermans, Thomas	University of Strasbourg	Speaker
Hochberg, David	Centro de Astrobiologia (CSIC-INTA)	Poster Presenter
Holliger, Philipp	MRC Laboratory of Molecular Biology, University	

	of Cambridge	Speaker
Horvath, Dezso	University of Szeged	Poster Presenter
Hu, Yue	Wellesley College	Poster Presenter
Jain, Ankit	CUNY Advanced Science Research Center	Poster Presenter
Kawasaki, Tsuneomi	Tokyo University of Science	Poster Presenter
Keating, Christine D	Pennsylvania State University	Speaker
Kelemen, Rachel	Boston College	Poster Presenter
Kieffer, Marion	University of Cambridge	Poster Presenter
Klajn, Rafal	Weizmann Institute of Science	Speaker
Kolb, Vera M	University of Wisconsin-Parkside, Kenosha, WI	Poster Presenter
Korendovych, Ivan V	Syracuse University	Speaker
Korevaar, Peter A.	Radboud University	Poster Presenter
Kulak, Monika R	Department of Chemistry, University of Waterloo	Poster Presenter
Kumar, Mohit	Advanced Science Research Center, City University of New York	Poster Presenter
Lackey, Hershel H	University of Utah	Poster Presenter
Lancet, Doron	Weizmann Institute of Science	Speaker
Larsen, Dennis	Technical University of Denmark	Poster Presenter
Lehman, Niles	Portland State University	Speaker
Li, Penghao	Northwestern University	Poster Presenter
Liang, Chen	Emory University	Poster Presenter
Liu, Mengfei	China University of Mining and Technology	Attendee
Lozoya Colinas, Adriana	Georgia Tech, Center for Chemical Evolution	Poster Presenter
Lynn, David G	Emory University	Chair
Maiti, Subhabrata	Pennsylvania State University	Poster Presenter
Maity, Indrajit	Ben-Gurion University of the Negev	Poster Presenter
Maric, Ivana R.	University of Groningen	Poster Presenter
Maselko, Jerzy	University of Alaska Anchorage	Speaker
Merkle, Daniel	University of Southern Denmark	Poster Presenter
Miljanic, Ognjen S.	University of Houston	Speaker
Montenegro, Javier	University of Santiago de Compostela	Poster Presenter
Murphy, Kyle	University of Vermont	Poster Presenter
Myrgorodska, Iuliia	University of Oxford	Poster Presenter
Ni, Rong	Hong Kong University of Science and Technology	Speaker
Obianyor, Chiamaka T	Georgia Institute of Technology	Poster Presenter
Ottel�, Johannes	University of Groningen	Poster Presenter
Otto, Sijbren	University of Groningen	Vice Chair
Pappas, Charalampos	University of Groningen	Poster Presenter
Pasek, Matthew A	University of South Florida	Poster Presenter
Peacock-Lopez, Enrique	Williams College	Poster Presenter
Philp, Douglas	Northwestern University	Speaker
Pogodaev, Aleksandr	Radboud University	Poster Presenter
Post, Elias	University of Oxford	Poster Presenter
Prins, Leonard J.	University of Padova	Speaker
Puangsamlee, Thamon	University of Houston	Poster Presenter
Robinson, Jennifer E	Proceedings of the National Academy of Sciences	Attendee
Ruiz-Mirazo, Kepa	University of the Basque Country	Discussion Leader

Samanta, Mousumi	Ben-Gurion University of the Negev	Poster Presenter
Sarkar, Swarnavo	NIST, Biosystems and Biomaterials Division	Poster Presenter
Sashuk, Volodymyr	Institute of Physical Chemistry PAS	Poster Presenter
Scanes, Robert J	University of Oxford	Poster Presenter
Schreiber, Roy E	University of Oxford	Poster Presenter
Schulman, Rebecca B	Johns Hopkins University	Speaker
Schwenzer, Birgit	National Science Foundation	Attendee
Semenov, Sergey N	Weizmann Institute of Science	Poster Presenter
Sementilli, Anthony	Emory University	Poster Presenter
Silva Brenes, Diana V	University of Puerto Rico	Poster Presenter
Skorb, Ekaterina	Infochemistry Group, ITMO University	Poster Presenter
Soai, Kenso	Tokyo University of Science	Speaker
Strazewski, Peter	University of Lyon	Speaker
Swenson, Colin S	Emory University	Poster Presenter
Taran, Olga	Emory University	Speaker
Taylor, Annette F	University of Sheffield	Speaker
Tian, Liangfei	University of Bristol	Poster Presenter
Toth, Agota	University of Szeged	Discussion Leader
Ueda, Michihisa	The University of Tokyo	Poster Presenter
Ulijn, Rein V.	Advanced Science Research Center, Graduate Center, CUNY	Vice Chair
van Brussel, David	University of St Andrews	Poster Presenter
Van der Helm, Michelle P	Delft University of Technology	Poster Presenter
van Esch, Jan H	Technical University of Delft	Speaker
van Esterik, Kayleigh S	University of Groningen	Poster Presenter
Vartanian, Ariane	Nature Communications	Attendee
von Krbek, Larissa K. S.	Department of Chemistry, University of Cambridge	Poster Presenter
Wagner, Nathaniel	Ben-Gurion University of the Negev	Speaker
Walker, Sara	Arizona State University	Speaker
Wang, Huaimin	Brandeis University	Poster Presenter
Xu, Bing	Brandeis University	Speaker
Zhang, Yifei	Columbia University	Speaker