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Association in Solution IV

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7-31-2017

# Conference Program

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### Recommended Citation

Ulf Olsson, Norman Wagner, and Anand Yethiraj, "Conference Program" in "Association in Solution IV", Ulf Olsson, Lund University, Sweden Norman Wagner, University of Delaware, USA Anand Yethiraj, Memorial University of Newfoundland, Canada Eds, ECI Symposium Series, (2017). [http://dc.engconfintl.org/assoc\\_solution\\_iv/52](http://dc.engconfintl.org/assoc_solution_iv/52)

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## *Program*

# Association in Solution IV

July 31 - August 4, 2017  
Memorial University  
St. John's, Newfoundland, Canada

### Conference Co-Chairs

**Ulf Olsson**  
Lund University, Sweden

**Norman Wagner**  
University of Delaware, USA

**Anand Yethiraj**  
Memorial University of Newfoundland, Canada



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**Previous conferences in this series:**

***Association in Solution for Function, Performance, and Synthesis***

**July 22-26, 2007**

**Barga, Italy**

*Conference Chairs:*

Saad Khan, North Carolina State University, USA

Robert Prud'homme, Princeton University, USA

***Association in Solution II***

**July 26-30, 2009**

**Tomar, Portugal**

*Conference Chairs:*

Samiul Amin, Malvern Instruments Ltd., UK

Saad Khan, North Carolina State University, USA

***Association in Solution III***

**July 23-27, 2012**

**Iceland**

*Conference Chairs:*

Ulf Olsson, Lund University, Sweden

Norman Wagner, University of Delaware, USA

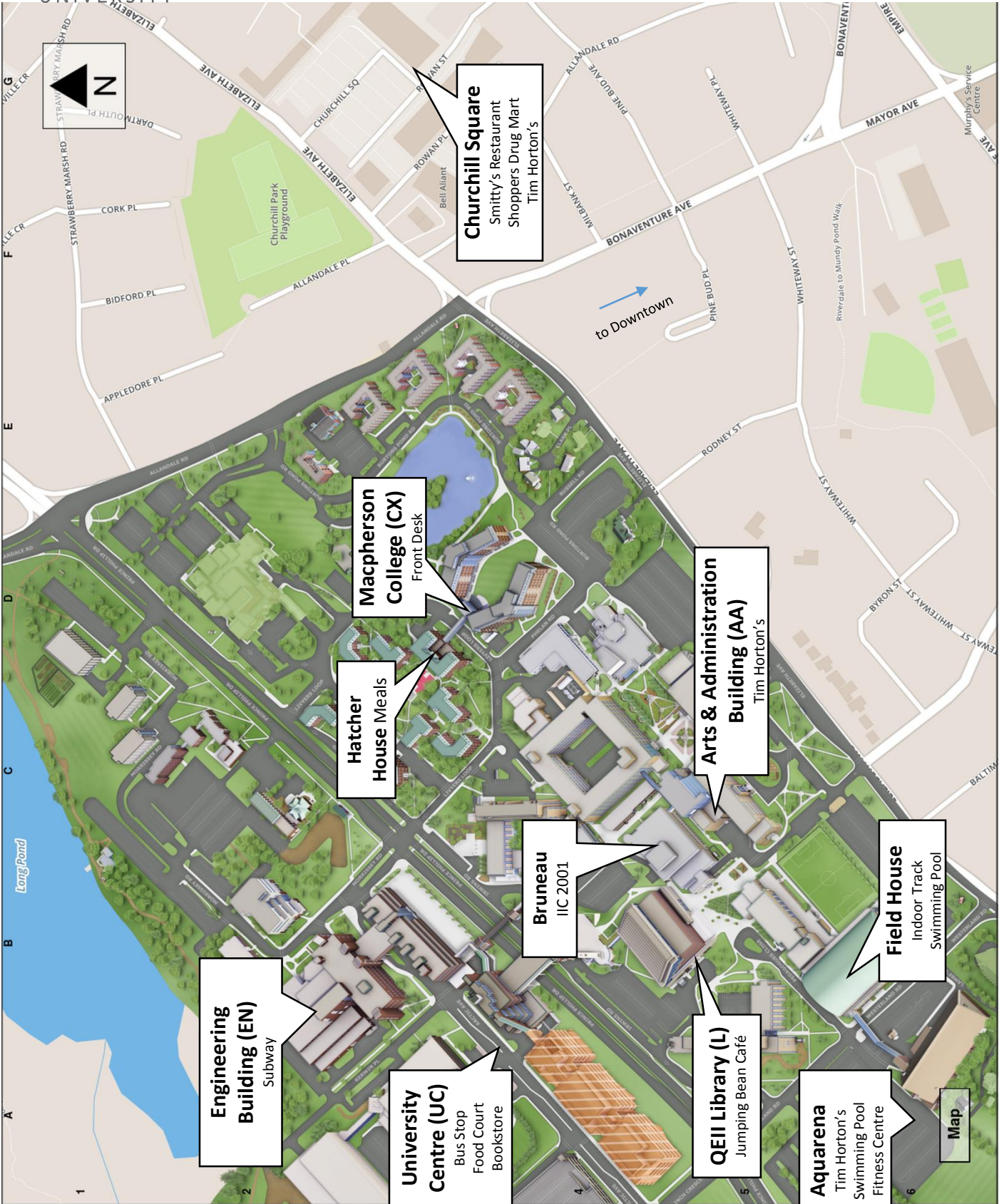
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**Field House**  
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**Engineering Building (EN)**  
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**University Centre (UC)**  
Bus Stop  
Food Court  
Bookstore

**QEII Library (L)**  
Jumping Bean Café

**Aquarena**  
Tim Horton's  
Swimming Pool  
Fitness Centre

Map

to Downtown



## **Monday, July 31, 2017**

16:00 - 17:00 Conference Check-in (Bruneau Building Atrium)  
(The check-in desk for accommodations is in Macpherson College)

17:00 - 17:15 Welcome

### **Association in Solution Intro**

17:15 - 17:45 **Three components, four phases. What does Gibbs' phase rule state?**  
Hakan Wennerström, Lund University, Sweden

17:45 - 18:15 **Cellulose association in solution**  
Ulf Olsson, Lund University, Sweden

18:15 - 19:45 **Presentation of posters**

19:00 - 20:30 Dinner

*Dinner Speaker: Shannon Lewis-Simpson, Memorial University  
Iron Rings: Meet the Iron Age in Newfoundland and Labrador*

### **Notes and room locations**

- *Technical sessions will be in Room IIC 2001 in the Bruneau Building.*
- *Poster Sessions will be in the Bruneau Building Atrium.*
- *All meals will be in Hatcher House.*
- *Audiotaping, videotaping and photography of presentations are prohibited.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3-5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
- *Please write your name on your program so that it can be returned to you if lost or misplaced.*
- *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*

**Tuesday, August 1, 2017**

07:30 - 08:30 Breakfast

**Electrostatics**

08:30 - 09:00 **Light from within: Illuminating the complexity of co-assembly from the inside out**  
Joris Sprakel, Wageningen University, Netherlands

09:00 - 09:30 **The salt curve revisited - Electrostatic charges govern the viscoelastic properties of micellar solutions**  
Peter Fischer, ETH Zurich, Switzerland

09:30 - 10:00 **Polyelectrolyte/Surfactant complexes (PESCs) – versatile self-assembled systems studied with respect to their structural, dynamical and rheological properties**  
Michael Gradzielski, TU Berlin, Germany

10:00 - 10:30 Coffee Break

**Capsules and Vesicles**

10:30 - 11:00 **Nature-inspired multi-compartment and multi-layered capsules**  
Srinivasa R. Raghavan, University of Maryland, USA

11:00 - 11:30 **Morphologies in vesicle-vesicle adhesion**  
Masayuki Imai, Tohoku University, Japan

11:30 - 12:00 **Solutions with structure for cellular delivery**  
Cecilia Leal, University of Illinois, Urbana-Champaign, USA

12:00 - 13:00 Lunch

13:00 - 15:30 **Discussions**

15:30 - 16:00 Coffee Break

**Driven Colloids**

16:00 – 16:30 **Drying aqueous colloidal systems: Molecular interactions, self-assembly and homeostatic behavior**  
Kevin Roger, CNRS/Toulouse University, France

16:30 - 17:00 **Self-assembly of particles via controlled evaporation**  
Basavaraja Madivala Gurappa, IIT Madras, India

17:00 - 17:30 **Swimmer-Microrheology**  
Shigeyuki Komura, Tokyo Metropolitan University, Japan

**Tuesday, August 1, 2017 (continued)**

17:30 - 17:45            Break

**Emulsions**

17:45 - 18:15            **Joining emulsion droplets using colloidal rods**  
Paul Clegg, University of Edinburgh, United Kingdom

18:15 – 18:45            **Surfactant aggregation in hydrophobic ionic liquid to formulate  
microemulsions for the enhancement of the solubility of enzymes and  
their catalytic performance**  
Xirong Huang, Shandong University, China

19:00 - 20:30            Dinner

**Wednesday, August 2, 2017**

07:30 - 08:30 Breakfast

**Colloidal Assembly**

08:30 - 09:00 **Field-directed assembly of responsive colloids**  
Peter Schurtenberger, Lund University, Sweden

09:00 - 09:30 **Phase behavior of colloid-polymer mixtures with unary or binary depletants**  
Jacinta C. Conrad, University of Houston, USA

09:30 - 10:00 **Inverse design of interactions for assembly**  
Thomas M. Truskett, The University of Texas at Austin, USA

10:00 - 10:30 Coffee Break

**Transport in Confined Spaces**

10:30 - 11:00 **Polymer conformation and dynamics in crowded environments: A combined diffusion NMR and small-angle neutron scattering study**  
Anand Yethiraj, Memorial University of Newfoundland, Canada

11:00 - 11:30 **Diffusion of small ligands in complex confining and reactive landscapes: The geometry of chemoreception**  
Francesco Piazza, University of Orléans and Centre de Biophysique Moléculaire (CBM), France

11:30 - 12:00 **Collective morphologies of the assemblies of the intrinsically disordered proteins of the Nuclear Pore Complex**  
Anton Zilman, University of Toronto, Canada

12:00 - 13:00 Lunch

13:00 - 15:30 **Discussions**

15:30 - 16:00 Coffee Break

**Particles and Interfaces**

16:00 - 16:30 **Adaptive microgels in complexes and at interfaces**  
Walter Richtering, RWTH Aachen, Germany

16:30 - 17:00 **Distortion of surfactant lamellar phases with particles and rough interfaces**  
Adrian R. Rennie, Uppsala University, Sweden

**Wednesday, August 2, 2017 (continued)**

17:00 - 17:30      **Multivalent binding and selectivity in cell targeting, molecular recognition and receptor activation**

Jure Dobnikar, Institute of Physics, Chinese Academy of Sciences, Beijing, China; Department of Chemistry, University of Cambridge, UK, China

17:30 - 17:45      Break

**Lasers and Algorithms**

17:45 - 18:15      **On the stability of metal nanoparticles synthesized by laser ablation in liquids**

Gerardo Palazzo, University of Bari, Italy

18:15 - 18:45      **Non linear physics for early immune recognition**

Paul Francois, McGill University, Canada

Free Evening

**Thursday, August 3, 2017**

07:30 - 08:30 Breakfast

**Protein/Peptide Association**

08:30 - 09:00 **Self-association of a highly charged, arginine-rich cell-penetrating peptide**  
Mikael Lund, Lund University, Sweden

09:00 - 09:30 **Protein-protein interactions in lipid membranes: A single particle study of Bcl-2 family proteins**  
Cécile Fradin, McMaster University, Canada

09:30 - 10:00 **Phase behavior study of human antibody solution using multi-scale modeling**  
Limei Xu, Peking University, China

10:00 - 10:30 Coffee Break

**Patchy Colloids/Interactions**

10:30 - 11:00 **Manifestation of one-patch attractive protein interactions in solution scattering and in solution structures**  
Malin Zackrisson Oskolkova, Lund University, Sweden

11:00 - 11:30 **Exploring a new class of effective interactions in crowded environment**  
Nicoletta Gnan, Institute of Complex Systems (CNR-ISC), Italy

11:30 - 12:00 **Polymer-salt-solvent effects on colloidal interactions**  
Johan Bergenholtz, University of Gothenburg, Sweden

12:00 Boxed lunch distribution

12:45 **Buses depart for whale watching excursion** (Pick up at Macpherson College)

14:00 - 16:00 **Whale watching boat tour** (Returning to Memorial University by 17:00)

18:00 - 19:00 **Poster Session**

19:00 - 20:30 Banquet Dinner

*Dinner speaker: Wayne Ledwell  
40 years of working with fishermen releasing large whales from fishing gear in Newfoundland and Labrador*

**Friday, August 4, 2017**

07:30 - 08:30 Breakfast

**Gels**

08:30 - 09:00 **Can softer junctions lead to stiffer gels? Understanding the role of stereochemistry in associative polymer gels**  
Surita Bhatia, Stony Brook University, USA

09:00 - 09:30 **Shear-gradient induced transport and non-local stresses: Non-uniform flow of glasses and gels**  
Jan K.G. Dhont, Forschungszentrum Juelich and Heinrich-Heine Universität Düsseldorf, Germany

09:30 - 10:00 **Self-assembly in patchy proteins: From transient networks to attractive glasses**  
Anna Stradner, Lund University, Sweden

10:00 - 10:30 Coffee Break

**Nanostructured Materials**

10:30 - 11:00 **Engineering multi-responsive complex coacervate core micelles for biomedical and materials science applications**  
Ilja Voets, Eindhoven University of Technology, Netherlands

11:00 - 11:30 **Structure and hydration of phytoglycogen nanoparticles: Nature's dendrimer**  
John R. Dutcher, University of Guelph, Canada

11:30 - 12:00 **Self-assembly of block copolymers in ionic liquids: Ultrastretchable iono-elastomers with mechano-electrical response**  
Norman J. Wagner, University of Delaware, USA

12:00 - 13:00 Lunch and Departure

## Poster Presentations

1. **Thermoelectrochemistry for harvesting waste heat**  
Jeffrey J. Black, UNSW Australia, Australia
2. **Assembly of colloidal nanocrystals into open networks**  
Delia J. Milliron, University of Texas at Austin, USA
3. **In-situ liquid phase imaging of block copolymer vesicle assembly**  
Hanglong Wu, Eindhoven University of Technology, Netherlands
4. **Tuning cracks by exploiting the shape of particles and external magnetic field**  
Hisayama, IIT Madras, India
5. **Studying solution self-assembled morphology and thermal stability of Polysorbate fractions and their implications in micellar degradation via small angle neutron scattering**  
Jannatun Nayem, University of Delaware and NIST, USA
6. **Hydrogelation of cyclic peptide amphiphile, colistin, through formation of hierarchically organized structure**  
Kosuke Morimoto, The University of Kitakyushu, Japan
7. **Structures and dynamic viscoelastic properties of micelles of mixtures of surfactin with cationic surfactant in aqueous solution**  
Kazuyuki Ito, The University of Kitakyushu, Japan
8. **Study on relation between spatial distribution and release rate of hydrophobic compounds incorporated in polymer micelles with anomalous small angle X-ray scattering**  
Shota Sasaki, The University of Kitakyushu, Japan
9. **Sensitive biosensors exploiting the minute changes in the capacitance of protein layers associated to the ligand recognition**  
Gerardo Palazzo, University of Bari, Italy
10. **Self-assembly of the peptide A10K – Intermediate state in aggregate formation**  
Axel Rüter, Lund University, Sweden
11. **Probing the structure of electrochemically-aggregated collagen**  
Kristin M. Poduska, Memorial University of Newfoundland, Canada
12. **Nanodroplets and the equation of state of deeply supercooled water**  
Shahrazad Malek, Memorial University of Newfoundland, Canada
13. **Deuterium NMR and rheology of microgel colloids at ambient and high pressure**  
Suhad A. Sbeih, Memorial University, Canada
14. **Multisequence algorithm for coarse-grained biomolecular simulations: Exploring the sequence-structure relationship of proteins**  
Adekunle Aina, Memorial University of Newfoundland, Canada
15. **Electrorheological responses of soft ionic colloids**  
Ealisha Jha, Memorial University, Canada