

# Water: Grand Challenges for Molecular Science and Engineering



ORGANIZERS: **Jim Skinner** **Seth Darling**

LOCATION: Telluride Intermediate School, 725 W Colorado Ave Telluride CO, 81435

Telluride Science Research Center

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
TIME	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul
8:30-9:00		<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>
9:00-9:30		1 Seth Darling		15 Junhong Chen		
9:30-10:00		2 N. Giovambattista		16 Chris Fennell		
10:00-10:30		<i>Break</i>		17 Meagan Mauter		
10:30-11:00		3 Veronica Augustyn		<i>Break</i>		
11:00-11:30		4 Garyk Papoian				
11:30-12:30						
12:30-1:30			<i>Lunch</i>			
1:30-2:00		5 Supratik Guha	9 Greg Kimmel		21 Yang Zhang	
2:00-2:30		6 Songi Han	10 Chong Liu		22 Thomas Loerting	
2:30-3:00		<i>Break</i>	<i>Break</i>		<i>Break</i>	
3:00-3:30		7 Kyoo Chul Park	11 Michele Ceriotti		23 Paola Gallo	
3:30-4:00		8 Ali Hassanali	12 Chuanshan Tian	<i>Break</i>	24 Harold Kung	
4:00-4:30			<i>Break</i>	18 Chris Stafford	<i>Break</i>	
4:30-5:00			13 Aleksandr Noy	19 Debora Rodrigues	25 Dor Ben-Amotz	
5:00-5:30			14 William Phillip	20 Narayana Aluru	26 Jim Skinner	
5:30-6:00					<b>PIZZA DINNER</b>	
6:00-6:30	REGISTRATION			PICNIC		
6:30-7:00			TOWN TALK			
7:00-7:30		WORKSHOP DINNER				
7:30-8:00						

1	Darling	Seth	Argonne	<a href="mailto:darling@anl.gov">darling@anl.gov</a>	"Interface engineering for water technologies"
2	Giovambattista	Nicolas	Brooklyn College	<a href="mailto:ngiovambattista@brooklyn.cuny.edu">ngiovambattista@brooklyn.cuny.edu</a>	"Temperature and pressure effects on water-mediated interactions at the nanoscale"
3	Augustyn	Veronica	NC State	<a href="mailto:vaugust@ncsu.edu">vaugust@ncsu.edu</a>	"Impact of confined water in layered transition metal oxides on ion intercalation"
4	Papoian	Garyk	Maryland	<a href="mailto:gpapoian@umd.edu">gpapoian@umd.edu</a>	"Water-mediated interactions in protein and protein-DNA complexes"
5	Guha	Supratik	Argonne	<a href="mailto:sguha@anl.gov">sguha@anl.gov</a>	"Cyberphysical systems for mapping water quality and challenges for water sensing: Our experiences in India"
6	Han	Songi	UCSB	<a href="mailto:songi@chem.ucsb.edu">songi@chem.ucsb.edu</a>	"What can single particle surface water diffusivity tell us about the surface?"
7	Park	Kyoo Chul	Northwestern	<a href="mailto:kpark@northwestern.edu">kpark@northwestern.edu</a>	"Bio-inspired atmospheric water generation"
8	Hassanali	Ali	ICTP	<a href="mailto:ahassana@ictp.it">ahassana@ictp.it</a>	"Back to the basics with water: HD/LD water and charging at hydrophobic interfaces"
9	Kimmel	Gregory	PNNL	<a href="mailto:gregory.kimmel@pnnl.gov">gregory.kimmel@pnnl.gov</a>	"Diffusion, ice nucleation and growth in deeply supercooled water films"
10	Liu	Chong	Chicago	<a href="mailto:chong813@stanford.edu">chong813@stanford.edu</a>	"Photo- and electrochemical water treatment and seawater mining"
11	Cerioti	Michele	EPFL	<a href="mailto:michele.cerioti@epfl.ch">michele.cerioti@epfl.ch</a>	"Modelling of second-harmonic scattering from aqueous solutions: A few answers and lots of questions"
12	Tian	Chuanshan	Fudan	<a href="mailto:cstian@fudan.edu.cn">cstian@fudan.edu.cn</a>	"Mechanism of electric power generation from ionic droplet motion on polymer supported graphene"
13	Noy	Aleksandr	LLNL	<a href="mailto:noy1@llnl.gov">noy1@llnl.gov</a>	"Water and ion transport in carbon nanotube porins"
14	Phillip	William	Notre Dame	<a href="mailto:wphillip@nd.edu">wphillip@nd.edu</a>	"Manufacturing multifunctional membranes from nanostructured polymers"
15	Chen	Junhong	Wisconsin-Milwaukee	<a href="mailto:jhchen@uwm.edu">jhchen@uwm.edu</a>	"Intelligent water systems enabled by real-time water sensors: An exciting opportunity for all water stakeholders"
16	Fennell	Christopher	Oklahoma State	<a href="mailto:christopher.fennell@okstate.edu">christopher.fennell@okstate.edu</a>	"Some how-tos in water simulation: Growing ice and molecular distribution modeling"

17	Mauter	Meagan	Carnegie Mellon	<a href="mailto:mauter@cmu.edu">mauter@cmu.edu</a>	Surface heterogeneity and surface energy effects"
18	Stafford	Chris	NIST	<a href="mailto:chris.stafford@nist.gov">chris.stafford@nist.gov</a>	"Advanced measurements of structure, dynamics, and transport in polyamide-based desalination membranes"
19	Rodrigues	Debora	Houston	<a href="mailto:dfrigirodrigues@uh.edu">dfrigirodrigues@uh.edu</a>	"Combining chemical and biological water treatment methods for improved removal of heavy metals: A synergistic approach"
20	Aluru	Narayana	Illinois	<a href="mailto:aluru@illinois.edu">aluru@illinois.edu</a>	"Confined water: Coarse-grained models, multiscale theory and applications"
21	Zhang	Yang	Illinois	<a href="mailto:zhyang@illinois.edu">zhyang@illinois.edu</a>	"How to walk on water? - Ioffe-Regel localization of acoustic excitations in liquids"
22	Loerting	Thomas	Innsbruck	<a href="mailto:thomas.loerting@uibk.ac.at">thomas.loerting@uibk.ac.at</a>	"Glass transitions in amorphous and crystalline H2O and D2O ices"
23	Gallo	Paola	Rome	<a href="mailto:gallop@fis.uniroma3.it">gallop@fis.uniroma3.it</a>	"Exploring the mysteries of supercooled water in the bulk phase, in confinement and in biologic aqueous solutions through dynamic crossovers"
24	Kung	Harold	Northwestern	<a href="mailto:hkung@northwestern.edu">hkung@northwestern.edu</a>	"Perspectives on energy-less catalytic removal of water contaminants"
25	Ben-Amotz	Dor	Purdue	<a href="mailto:bendor@purdue.edu">bendor@purdue.edu</a>	"Open questions about water structure, and insights from vibrational spectroscopy"
26	Skinner	James	Chicago	<a href="mailto:jlskinner@uchicago.edu">jlskinner@uchicago.edu</a>	Experiments, simulations, and the location of the liquid-liquid critical point in supercooled water"

TSRC Workshop on “Water: Grand Challenges for Molecular Science and Engineering”

Organizers: Jim Skinner (U Chicago) and Seth Darling (Argonne NL)

July 9-13, 2018

Notes on Schedule:

1. All breakfasts, breaks, talks, the lunch, the picnic, and the pizza dinner will be held at the Telluride Intermediate School, 725 W Colorado Ave.
2. Sunday registration will be at the Phoenix Bean, 221 W Colorado Ave.
3. The workshop dinner will be at Sidework, 225 S Pine St.
4. The Town Talk will be at the Telluride Conference Center in Mountain Village.
5. Each talk is scheduled for 30 minutes. Rather than tell a complete scientific story, the point is simply to let others know about the kinds of things you are working on. Interested parties can then discuss in smaller groups during the free time of the meeting. We would suggest preparing about 20 minutes worth of material, to allow for 10 minutes of discussion.