

# Future Directions of Quantum Information Processing Workshop

Maj. John Roh and Dr. Kate Klemic | August 25-26, 2016 | Arlington, VA

Basic Research Innovation and Collaboration Center (BRICC)  
4075 Wilson Blvd., Suite 350 | Liberty Room  
Arlington, VA 22203

## Day 1 – Thursday, August 25, 2016

Time	Title	Speaker
7:45 – 8:15	Registration	
8:15 – 8:30	Welcome and Introductions	Dr. Seth Lloyd
8:30 - 8:45	Overview of Quantum Information Processing: State-of-the-Art	TBD
8:45 - 9:00	Overview of Emerging Quantum Information Technologies: Atom and Optical Systems	TBD
9:00 – 9:15	Overview of Emerging Quantum Information Technologies: Superconducting Systems	TBD
9:15 – 10:15	<b>Breakout Session I: Presentations</b> <i>“What are the projected capabilities of and challenges to quantum information processing over the next 10-20 years?”</i> Topics: <ol style="list-style-type: none"> <li>1. Atom and Optical Systems: Ion Traps, Cold Atoms</li> <li>2. Superconducting Quantum Information Processors, Including Quantum Annealing</li> <li>3. Quantum Communication Technology and Quantum Optics</li> </ol>	
10:15 – 10:30	MORNING BREAK	
10:30 – 11:30	Breakout Session I: Discussion	
11:30 – 11:45	Breakout Session I: Draft Outbriefing Summary	
11:45 – 12:45	LUNCH	
12:45 – 1:45	Report Out from Breakout I	
1:45 – 2:45	<b>Breakout Session II: Presentations</b> <i>“What are the novel applications of emergent quantum information processing technologies? What obstacles must be overcome to attain these applications?”</i> Topics: <ol style="list-style-type: none"> <li>1. Applications of Mid-scale Quantum Computers, Including Quantum Simulation</li> <li>2. Quantum Communication, Including Quantum Cryptography and</li> </ol>	

	Advanced Quantum Internet. 3. Ultra-precise Quantum Sensing and Metrology.
<b>2:45 – 3:00</b>	<b>BREAK</b>
<b>3:00 – 3:45</b>	<b>Breakout Session I: Discussion</b>
<b>3:45 – 4:00</b>	<b>Breakout Session I: Draft Outbriefing summary</b>
<b>4:00 – 5:00</b>	<b>Report Out from Breakout II</b>
<b>5:00</b>	<b>MEETING ADJOURNED FOR THE DAY</b>

<b>Day 2 – Friday, August 26, 2016</b>		
<b>Time</b>	<b>Title</b>	<b>Speaker</b>
<b>7:45 – 8:15</b>	<b>Registration</b>	
<b>8:15 – 8:30</b>	Day 1 Recap	Dr. Seth Lloyd
<b>8:30 – 9:30</b>	<b>‘White Space’ Presentation I</b> Discussion of topics which did not fit into the framework of day 1, but need to be discussed.	TBD
<b>9:30 – 10:30</b>	<b>‘White Space’ Presentation II</b> Discussion of particularly far-out (or long-term), high-risk, high-impact ideas.	TBD
<b>10:30 – 10:45</b>	<b>MORNING BREAK</b>	
<b>10:45 – 11:45</b>	<b>Discussion of Key Ideas/Components for Report</b>	TBD
<b>11:45 – 12:00</b>	<b>Closing Remarks</b>	
<b>12:00</b>	<b>Lunch and Departure</b>	