

2022 Optical Sciences Winter School (OSWS) Program

OSWS Webpage:	https://wp.optics.arizona.edu/winter-school-workshop/
MST (Mountain Standard Time) Link:	https://www.timeanddate.com/time/zones/mst
Zoom Link:	https://arizona.zoom.us/j/83590174385
Zoom Password:	Please, check the OSWS announcement group email sent to you.

Time (MST)	Jan 5 2022 (Wed)			Jan 6 2022 (Thu)			Jan 7 2022 (Fri)		
	Program	Speaker	Presider	Program	Speaker	Presider	Program	Speaker	Presider
9:45 AM	<i>Casual Chats Before the Official Programs (on-going academic program Q&A sessions by Anderson / Koshel)</i>								
10:00 AM	Welcome Remark UA Optics Program Intro	Dean. Thomas Koch (Univ. of Arizona)	Prof. Daewook Kim	Optical Sciences Alumni Talk 1	Dr. Sander Zandbergen (JPL, CA)	Prof. Brian Anderson	Keynote Talk: Atoms and Photons: from Fundamental Physics to Quantum Technology [1]	Prof. Monika Schleier-Smith (Stanford)	Prof. Poul Jessen
10:30 AM	Invited talk: Challenges and opportunities in virtual and augmented reality displays [2]	Prof. Hong Hua (Univ. of Arizona)	Prof. Lars Furenlid	Optical Sciences Alumni Talk 2	Dr. Stacey Sueoka (Daniel K. Inouye Solar Telescope, Hawaii)	Prof. Daewook Kim			
11:00 AM	Winter School Lecture 1: Optical Engineering: a key enabler for technology in daily life	Prof. Yuzuru Takashima (Univ. of Arizona)	Prof. Daewook Kim	Career and Life Panel Discussion	Dr. Sander Zandbergen (JPL, CA) Dr. Stacey Sueoka (DKIST, Hawaii) Prof. Euan Mcleod Prof. Meredith Kupinski PhD Student Jaclyn John	Prof. Daewook Kim	Large Binocular Telescope Video Tour & Scientist Panel Live Q&A	Dr. Barry Rothberg & John Hill with LBT Adaptive Optics Team	Prof. Daewook Kim
11:30 AM									
12:00 PM	Social Networking Coffee/Tea Break Time (on-going academic program Q&A session)	Associate Deans: Prof. Brian Anderson & Prof. John Koshel (Univ. of Arizona)	Prof. Brian Anderson	Univ. of North Carolina at Charlotte Optics Program Intro & Research	Prof. Rosario Porras (Univ. of North Carolina at Charlotte)	Prof. Masud Mansuripur	Women in Optics (WIO) and Student Optics Chapter (SOCK) Spotlight [3]	Jenna Montague (WIO Vice-president) and Logan Pawlowski (SOCK)	Prof. Daewook Kim
12:30 PM	Winter School Lecture 2 (Physical/Quantum Optics)	Prof. Jason Jones & Prof. Poul Jessen (Univ. of Arizona)	Prof. Jason Jones	Winter School Lecture 4: The Cellphone Polaroscope (Tech-kit Demo: "Polarizations")	Prof. Meredith Kupinski (Univ. of Arizona)	Prof. Meredith Kupinski	Optical Science Topical Sub-group Q&A w/ faculties	OSWS Committee	Prof. Euan Mcleod
1:00 PM									
1:30 PM	<i>Meal Break at your own</i>			<i>2022 Winter School Group Photo (via Zoom Screen Capture) & Break</i>			<i>Meal Break at your own</i>		
2:00 PM	Facilities Intro: NSF Center for Quantum Networks	Prof. Zhesen Zhang (Univ. of Arizona)	Prof. Poul Jessen	Univ. of Rochester Optics Program: "Then and Now: How Rochester and Tucson together led the world in defining optics"	Prof. Thomas Brown (Univ. of Rochester)	Prof. Daewook Kim	Univ. of New Mexico Optics Program Intro & Research	Prof. Ganesh Balakrishnan (Univ. of New Mexico)	Prof. Masud Mansuripur
2:30 PM	Invited talk: 3D Laser Nanoprinting	Prof. Martin Wegener (Karlsruhe Institute of technology)	Prof. Masud Mansuripur	Montana State Univ. Optics Program: "Advancing the Optics and Photonics Frontier in Montana"	Prof. Joe Shaw (Montana State Univ.)	Prof. Daewook Kim	Student Mini-presentation w/ Pre-recorded Talks and Live Q&A	Participating OSWS Students	Prof. Euan Mcleod Prof. John Koshel
3:00 PM	Winter School Lecture 3 (Tech-kit Demo: "Sources of light and color")	Prof. Euan Mcleod (Univ. of Arizona)	Prof. Euan Mcleod	10 Parallel Live Lab Tour (15 min repeating): https://wp.optics.arizona.edu/winter-school-workshop/virtual-lab-tours-2022/	Labs by Jason Jones, Poul Jessen, Dal Wilson, Yuzuru Takashima, Bob Norwood, Heejoo Choi, Khanh Kieu, Lars Furenlid, and more	Prof. Daewook Kim (using Zoom sessions set by each lab)			
3:30 PM									
4:00 PM	<i>Break (on-going academic program Q&A sessions by Anderson / Koshel)</i>						<i>Closing Happy Hour (Bring Your Own Food and Drink)</i>		
4:30 PM									
5:00 PM	Social Event & Tech-kit Demo	OSWS Student Committee	Student Committee Chair: Gabe Richardson	Student Only Q&A Panel Discussion	OSWS Student Committee	Student Committee Chair: Gabe Richardson			

[1] The power of quantum information lies in its capacity to be non-local, encoded in correlations among entangled particles. Yet our ability to produce, understand, and exploit such correlations is hampered by the fact that the interactions between particles are ordinarily local. To circumvent this limitation in the laboratory, we let distant atoms “talk” to each other with the aid of photons that act as messengers. This toolbox opens opportunities ranging from simulating quantum gravity to exploring new computational paradigms for problems intractable to classical computers.

[2] Abstract: A head-worn display is a key enabler for virtual and augmented reality applications and will play important role in future human-computer intelligent systems. In this talk, after a brief historical overview, I will discuss major optical challenges and opportunities for developing next-generation VR/AR display technologies.

[3] WiO 10 min Talk Description: Learn more about WiO! WiO (Women In Optics) is a University of Arizona student club run by graduate and undergraduate students of the James C. Wyant College of Optical Sciences. We lead events and initiatives to serve the optical sciences community specifically providing a forum for students from underserved, underrepresented, and underinvested backgrounds.

SOck 10 min Talk Description: Introduction to SOck (Student Optics Chapter) and its mission to support students of optics by providing valuable academic resources, facilitating social networking, & representing the study of light to the public.

[4] Abstract: I will provide a review of how optics research and education first came to the United States, how influential the partnership among faculty and graduate students has been for both Tucson and Rochester and how this partnership has spawned Optics Institutes around the world. I'll introduce some alumni of our graduate program, provide a snapshot of research opportunities and graduate student life in Rochester, and end with some personal observations about optics career paths.