



## WEBINARS

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# Freeform Optics for Imaging: Design Methods

Wednesday, May 26, 2021 1:00 PM - 2:00 PM EDT

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## .: About This Webinar

### Part 1 of the 2021 Freeform Optics Series

The rise of freeform optics in imaging applications has led to optical systems with increased etendue, more compact volumes, and superior performance. The complexity of freeform surfaces allows for precise control of the image-degrading aberrations, but the shapes can be severe without advanced optical design techniques. In this presentation, Jannick Rolland, Ph.D., and Aaron Bauer, Ph.D., of the University of Rochester's Institute of Optics, will provide an overview of the methods in which systems utilizing freeform optics have been designed and the steps taken to bridge freeform design to manufacture. Examples of freeform systems from space applications to an application in the movie industry will be discussed.

To read more about the work behind this webinar series, you can access the group's latest paper, "[Freeform optics for imaging](#)," published by the Optical Society (OSA).

**Part 2:** "[Freeform Optics for Imaging: Manufacturing Methods](#)" on May 27, 2021.

**Part 3:** "[Freeform Optics for Imaging: Mid-Spatial Frequency Errors](#)" on June 2, 2021.

#### Who should attend:

Optical designers, engineers, those involved in the manufacture of optical systems, those involved in precision technologies, and anyone who is interested in increasing the compactness and performance of optical systems. Freeform optics encompasses a range of disciplines and industries, including transportation, semiconductor, displays, lighting, IR and defense, photovoltaics, remote sensing, and even quantum optics.

#### About the presenters:

Jannick Rolland, Ph.D., is the Brian J. Thompson Professor in Optical Engineering at the University of Rochester. She earned an optical engineering diploma from the Institut d'Optique, France, and M.S. and Ph.D. degrees from the College of Optical Sciences at the University of Arizona. Rolland is the director of the National Science Foundation Center for Freeform Optics (CeFO). As a faculty member, first at the Center for Research and Education in Optics and Lasers (CREOL) at the University of Central Florida and then at the Institute of Optics in Rochester, she developed Gabor-domain optical coherence microscopy that has been commercialized by LighTopTech Corp., which she co-founded. Rolland is a fellow of The Optical Society (OSA), SPIE, the European Academy of Sciences (EUAS), and the National Academy of Inventors (NAI). She has been the recipient of the OSA David Richardson Medal, the University of Rochester Edmund A. Hajim Outstanding Faculty Award, the University of Arizona College of Optical Sciences Alumna of the Year award, and OSA's Joseph Fraunhofer Award/Robert M. Burley Prize.

Aaron Bauer, Ph.D., is a senior research engineer at the Institute of Optics at the University of Rochester, where he investigates the latest optical design topics. Bauer earned a B.S. in physics from the University of Wisconsin-Eau Claire and a Ph.D. in optics at the University of Rochester in 2016. In 2020, he received the OSA Kevin P. Thompson Optical Design Innovator Award for his theoretical, creative, and innovative design methods for freeform optics. Bauer holds two U.S. patents and is an author of 20 peer-reviewed articles and a book chapter on augmented and virtual reality.



## .: Mark Your Calendar

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**Time: 1:00 PM - 2:00 PM EDT**

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- [Freeform Optics for Imaging: Manufacturing Methods](#), 5/27/2021 1:00:00 PM EDT
- [Freeform Optics for Imaging: Mid-Spatial Frequency Errors](#), 6/2/2021 1:00:00 PM EDT

### Archived Webinars

- [Improving the Design of Optical Devices Through STOP Analyses](#)
- [Photonics in Quantum Computing and Quantum Networking](#)
- [Photonics Spectra Optics Conference 2021: April 27-28](#)

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