



Title: Hybrid, Online Delivery of Hands-On Technical Courses

Date/Time: Tuesday, July 29, 8:30 AM – 4:30 PM

Location: Renaissance Austin Hotel

Cost: \$160

Description: In recent years, online courses in higher education have grown in popularity - and in some cases, they have improved in quality and effectiveness. To improve access, convenience, increased enrollment and cost, colleges need to also devise effective methods to deliver online elements of technical courses, where “hands-on learning” is integrated into the delivery. OP-TEC is designing and pilot-testing “hybrid online” courses to teach photonics to three different student groups:

- College and high school faculty who require professional development to teach new photonics courses.
- Employed adult technicians who are retraining for careers in photonics or photonics-enabled technologies.
- High school students in STEM education who wish to take dual-enrollment courses in optics and photonics.

The purpose of this workshop is 1) to examine creative ways to deliver effective, technical education with an online component, 2) to understand the benefits of online technical education to students, institutions and employers, 3) to learn about OP-TEC’s experience in designing and delivering a photonics online course, and 4) to explore ways to adopt OP-TEC’s online photonics course and/or to create/deliver new technical education online courses.

Following the workshop presentations, there will be group discussions/reporting, a Q&A session and live, hands-on demonstrations of course delivery elements.

Presenters:



Daniel M. Hull is a Registered Professional Electrical Engineer and a pioneer in the field of lasers. He has thirteen years of experience in the development of high-power lasers and laser applications in defense, aerospace, and telecommunications. For over thirty years, Dan has been a leader in educational reform, directing initiatives to improve the teaching of science, mathematics, and emerging technologies in secondary and postsecondary institutions through the design of innovative curricula, development of lab-based instructional materials, and faculty professional development. He is the author of six books, over eighty papers, and thirty instructional modules in laser/electro-optics. Dan served as the President and CEO of CORD from 1979 to 2006. During that period, he was the founder of the National Coalition of Advanced Technology Centers and the National Tech Prep Network. In 2006, he formed OP-TEC, the NSF/ATE National Center of Excellence in Optics and Photonics Education. He is currently the Director of OP-TEC.



Raymond Rose first began defining and building a method of creating learning communities online in the mid-90s. He helped envision, create, and administer The Virtual High School, considered to be the first virtual high school in the United States. He has also designed, developed and directed a series of groundbreaking online professional development efforts.

Rose recently joined MentorNet, the E-Mentoring Network for Diversity in Engineering and Science, as the Director of Programs. Formerly, he was Vice President of The Concord Consortium, a non-profit educational research and development group that guides schools nationally and internationally to realize the educational promise of technology.

He has been an educator for 40 years in a variety of roles and has extensive experience with research and development projects in K-12, college and university programs. He has also worked extensively with policy-makers and leaders in online learning. His passion is using technology to make learning work for all students.



Dr. John Souders, Ph.D., is the Director of Curriculum for the National Center for Optics and Photonics Education (OP-TEC). Prior to his work with OP-TEC, Dr. Souders was the Executive Dean of Liberal Arts at Cedar Valley College in Dallas and the Vice President of Curriculum and Materials Development at the Center for Occupational Research and Development (CORD). He has also directed the development of an online curriculum for an information technology academy and managed the development/editing of photonics technology and “soft-skills” instructional materials. Dr. Souders received his Ph.D. in Nuclear Engineering from the Air Force

Institute of Technology.