



OPEN Optics and Photonics Education News

Newsletter of the Optics and Photonics College Network

January 2017

From the Executive Director



Happy New Year 2017!

I am pleased to introduce the inaugural issue of Optics and Photonics Education News (OPEN). This publication will provide photonics education news and resources for educators, students, graduates, and employers involved with college photonics programs supported by the National and Regional NSF ATE Photonics Centers. The newsletter will be distributed monthly by email to update you on new photonics information and resources. The content of the newsletter will come from the photonics centers, the OPCN working groups, PACT alumni council members, and professional societies. We also invite you to submit news, photos, events, articles, tools, resources, and other items you think would be of interest; please send such items to our publications staff (prmanager@op-tec.org) for possible inclusion in the next issue.

Best wishes for a productive year.

Dan Hull

New 2nd Edition: Laser Systems and Applications (Course 2) Textbook Enhancements

The second edition of Laser Systems and Applications has arrived, and with it come exciting enhancements. In November, OP-TEC recorded a [webinar](#) explaining the enhancements, features, and instructor materials available for the second edition of Laser Systems and Applications (Course 2), the student text for a two-semester hands-on course intended to follow OP-TEC's Fundamentals of Light and Lasers (Course 1).

OP-TEC is developing a second webinar to introduce a list of videos compiled to correspond with each of the ten modules of Course 2. These videos cover a wide range of the topics discussed in the text, and are separated by module for easy use. Please note that the videos are hosted on other websites, and are not owned by OP-TEC. In addition to the list of videos, OP-TEC, in conjunction with several key partners, has written short student assignments to accompany each video. The assignments contain questions about the content of the video, and often relate back to key concepts covered in the text. These resources are free for faculty use, and we welcome your feedback on them.

Textbook Features

Module Indexes
Acronym Glossary
Safety Considerations

Instructor Resources

Faculty Guide
PST Curriculum Guide
Figures and Images

In This Issue

[From the Executive Director](#)

[Laser Systems and Applications Course 2 Enhancements](#)

[New Textbook for Integrated Photonics Manufacturing](#)

[New Fiber Optics Textbook](#)

[MPEC Hosts Lasers in Manufacturing Symposium](#)

[LASER-TEC Executive Report](#)

[SPIE News](#)

[Upcoming Events](#)

[OSA News](#)

[Community College Innovation Challenge](#)

[Light: A Lab Manual for Teachers](#)

[PACT Alumni Updates](#)

[OPCN Working Groups](#)

[Join the Conversation](#)

Upcoming Events

HI-TEC Presenter Deadlines
January 16 (Workshops)
February 5 (Sessions)

1/28/17 - 2/02/17
SPIE Photonics West
San Francisco, CA

2/01/17
2017 Indian Hills Alumni & Friends Reception
5:00 - 7:30 pm
Jillian's
San Francisco, CA

3/12/17 - 3/15/17
Innovations Conference 2017
(MPEC Presentation and ATE Joint Centers Exhibit)
San Francisco, CA

7/17/17 - 7/20/17
HI-TEC 2017
Salt Lake City, UT

Troubleshooting Strategies
Workplace Scenarios

Laboratory Videos
Student Assignment Videos
Student Video Questions

[View Events Webpage](#)

Request Instructor Evaluation Copy

Purchase Course 2 Laser Systems & Applications 2nd Edition

New Textbook: Integrated Photonics Manufacturing

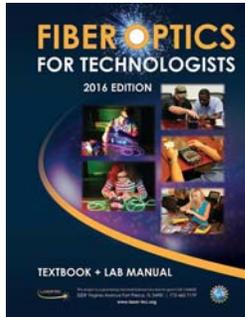
Integrated Photonics (IP) is a rapidly emerging field that is revolutionizing digital electronics and placing the U.S. in a lead position for the manufacture of Photonics Integrated Circuits (PICs). OP-TEC is working with the American Institute for Manufacturing Integrated Photonics (AIM) to create educational programs for technicians who work in IP. This webinar describes OP-TEC's accomplishments in developing skill standards, curriculum models and IP course development.

[View Webinar](#)

Request Integrated Photonics Instructor Evaluation Copy

New Fiber Optics Textbook and Lab Manual for Technologists Developed by LASER-TEC

LASER-TEC recently published the *Fiber Optics for Technologists Textbook and Lab Manual*. This is an easy-to-read introductory textbook written with the technologist and technician in mind. It provides the skills and theory necessary for someone who wants to enter the fiber optics field. This project evolved from the US Navy's "Introduction to Fiber Optics" NEETS module 24. Many significant changes were made to the original work. The technical content was brought up-to-date with modern science and new technologies, and color-rich illustrations now accompany the text. The textbook contains worked-out examples, end-of-section review questions and experiments. Instructor resources include PowerPoint presentation files and test banks.



This textbook is now available for purchase from [LASER-TEC's website](#) and [Amazon](#). To request a desk copy, please contact Dr. Chrys Panayiotou at 772.462.7621 or cpanayio@irsc.edu.

MPEC Hosts Lasers in Manufacturing Symposium

The Midwest Photonics Education Center (MPEC) in partnership with industrial laser company TRUMPF Inc., recently hosted a "Lasers in Manufacturing Symposium" at Indian Hills Community College. The symposium featured six speakers from across the nation including Tracey Ryba and Frank Geyer of TRUMPF Inc. (MI), Kurt Erickson of St. Jude Medical (NC), Matt Sidlinger of Genesis Systems Group (IA), Travis Thompson of John Deere (IA), and Frank Reed of MPEC (IHCC). Speakers highlighted topics such as laser sources, applications and integration, design considerations for laser welding, laser use in manufacturing medical devices, and advances in 3D metal printing. The event culminated

The Quantel Laser/OSA Bright Ideas Competition

The OSA Foundation (OSAF) and Quantel Laser are excited to launch the Bright Ideas Competition, giving students, scientists, engineers and entrepreneurs the opportunity to compete for a laser system from Quantel Laser's portfolio of products.

Professionals working in for-profit and non-profit organizations are invited to submit a proposal requiring a Quantel Laser system. Submissions will be judged on originality, merit, and feasibility by an independent panel of reviewers. A handful of finalists will be asked to present at the CLEO conference, May 14-19, 2017, in San Jose, CA.

Proposals will be accepted through March 1, 2017. Additional information and instructions on how to apply can be viewed at the [program webpage](#).

Community College Innovation Challenge

The National Science Foundation (NSF) and the American Association of Community College (AACC) presents its third annual Community College Innovation Challenge (CCIC). Community college students participating in the contest are asked to innovate a STEM-based solution to a real-world problem. Teams must submit their ideas before February 15, 2017.

[Read More](#)

Light: A Lab Manual for Teachers

This book of photonics lab experiments for high school teachers was produced with the support of the OSA Foundation (OSAF) and the College of Optics and Photonics at the University of Central Florida in celebration of the International Year of Light.

[Read More](#)

[Photonics Alumni Council for](#)

with a tour of the laser laboratory and a demonstration of stainless steel laser welding with the new TRUMPF TruLaser Station 5005 welding. According to MPEC Director Greg Kepner, there were 88 attendees that included representatives from 18 companies, along with faculty and students from three educational institutions including William Penn University, Northeast Iowa Community College, and IHCC. Dave Landon of Vermeer Corporation (past president of the American Welding Society) remarked that he was very pleased with the event and believed that it provided valuable technical information on laser manufacturing processes. The speaker presentations are available to review at www.midwestphotonics.org.

LASER-TEC Executive Report

LASER-TEC has developed resources, shaped college policies, leveraged partnerships, and hosted numerous events to address the shortage of qualified laser and fiber optics technicians across the southeastern United States. Dedicated to improving laser and fiber optics education in the southeast and nationwide, the Center has launched extensive initiatives in curriculum and professional development and has significantly increased public outreach and awareness.

To read more about LASER-TEC results in 2013-2016, please visit: <http://www.laser-tec.org/executive-report.html>.

SPIE Education Outreach Grants: January 31 Application Deadline

SPIE's Education Outreach Grants Program offers small grants twice a year to non-profit organizations and educational institutions for photonics education outreach activities. This is a potential funding source for OPCN colleges planning summer camps, teacher workshops, and similar outreach activities. Proposed activities must take place sometime between August 2017 and July 2018. Applications are due January 31. Notifications will be made in April or May.

At least four OPCN college faculty members have received these grants:

1. Brian Sweeney, OPCN Coordinator at Northwestern Michigan College, received a grant in 2014 that covered half the purchase price (matched by college funds) of an isolation table used for outreach & recruiting activities.
2. Andres Diaz/Jonathan Friedman at Puerto Rico Photonics Institute, received a grant in 2014 to buy equipment and supplies for their optics and photonics outreach program.
3. Feng Zhou, OPCN Coordinator at Indiana University of Pennsylvania, received a grant in 2007 for conducting a photonics summer camp.
4. John Pedrotti, OPCN Coordinator at Texas State Technical College, has received two grants to support teachers attending summer photonics institutes.

In 2016 SPIE awarded \$90,000 in education outreach grants to 30 organizations. Most of the grants are \$2,000-\$3,000. The key criterion in evaluation and ranking applications is the potential to impact students and to increase optics and photonics awareness. For information about the grant program, last year's recipients, and applications visit

Technicians (PACT)



Cassandra Durand is one of the newest members of the Photonics Alumni Council for Technicians (PACT). After graduating from Irvine Valley College in 2015, she began working for Akima Infrastructure Services at the National Ignition Facility at Lawrence Livermore National Laboratory as an Engineering Technician IV/Target Diagnostic Operator. This past year, Cassandra and Ron Darbee, Engineering Division Superintendent - Laser Systems Engineering & Operations at Lawrence Livermore National Laboratory, worked together to recruit new students into photonics careers. The pair demonstrates how PACT members and photonics employers can help encourage students to pursue a path to success in optics and photonics.

OPCN Working Groups

Professional Development Working Group
Anca Sala, Chair
anca.sala@baker.edu

Student Recruiting Working Group
Josie Vargas Lara
jvargas@op-tec.org

Program Assistance Working Group

the [program webpage](#). To see a preview of the fields in the application form, click on the Application Form link and then click on Preview.

Gary Beasley, Chair
gbeasley@ccccc.edu

Equipment Working Group
Frank Reed, Chair
frank.reed@indianhills.edu



2017 HI-TEC

HIGH IMPACT TECHNOLOGY EXCHANGE CONFERENCE
July 17-20 Salt Lake City, Utah
Grand America Hotel

Sponsored by a consortium of NSF ATE centers and projects

highimpact-tec.org

Join the Conversation

We hope you enjoyed this edition of the OPEN newsletter. We would really like to hear from you. If there is some subject that you would like us to discuss or look into, please let us know at prmanager@op-tec.org.

OPEN is published by the National and Regional NSF Advanced Technological Education Centers for Optics and Photonics Education.

This material is based upon work supported by the National Science Foundation under Grant No. DUE-1303732. Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

