

Report of the National Visiting Committee LASER-TEC: The laser and Fiber Optics Regional Center

Meeting Dates: May 28-29, 2014

Report Date: June 13, 2014

NVC Members Daniel Hull, PI, Executive Director, OP-TEC, the National Center for Optics and Photonics Education

Dede Starnes, Corning Cable Systems, (via T/C)

Helen Wild, Asst. Supt. St. Lucie School District (not attending)

Cindy Boyd, Pres. PCS Fiber (not attending)

Lew Temares, U Miami (not attending)

Don Hawkins, VP PCS Fiber

James Lipscomb, L-3 Inc. (not attending)

Ron Darbee, Lawrence Livermore National Labs

Alan Doctor, Pres. Microwave Applications (not attending)

Fraser Dalglish, Harbor Branch Oceanographic

Glenn Rustay, Principal, St Lucie School District

Michael Bass, CREOL, Univ. Cen. FL

LASER-TEC PI's

Chrys Panayiotou, PI, Director LASER-TEC, Indian River State College, Ft. Pierce, FL

Gary Beasley, CoPI, Photonics Instructor, Central Carolina CC

James Pearson, Co-PI, Executive Director, FL Photonics Cluster (not attending)

Gaby Hawat, Co-PI, VP Economic Development Valencia College (not attending)

Nasser Hedayat, VP Technical Education, Valencia

Evaluator

Lew Temares, VP Information Technology Emeritus, U Miami

Others Attending: LASER-TEC Staff & Partner Colleges

Nasser Hadyat, Dean of Technologies, Valencia College, FL

Dorian McEntire, Tri-County Technical College

Natalia Chekhovskaya Program Manager, LASER-TEC, IRSC

Lauren Hays Program Coordinator, LASER-TEC, IRSC

William Keiser, Laboratory Technician. LASER TEC, IRSC

Ed Massey, President, IRSC

Tina Hart, VP IRSC

Alan Roberts, VP IRSC

Jose Farinos, Dean IRSC

Overview

The mission of LASER-TEC is to *develop a sustainable pipeline of qualified laser and fiber optic technicians to meet industry needs in the Southeastern United States.*

Goals

1. Assist colleges with existing LFO programs by providing support, professional development, and equipment.

2. Assist colleges without LFO programs to create courses and programs by providing startup support.
3. Provide professional development for K-12 STEM teachers to bring LFO career awareness to students to create a high-school-to-college student pipeline.
4. Create awareness of LFO careers and a clear pathway for returning veterans to recruit them for participating regional college programs.
5. Develop, expand, and strengthen partnerships between LFO industries and all regional colleges.
6. Expand the membership of the Industrial Advisory Board (IAB), and monitor the supply, demand, and skill-set needed by LFO technicians in the Southeast region through a strong Industrial Advisory Board.

LASER-TEC is completing its 10th month with initial NSF grant funding received in August 2013. (Due to federal funding issues, operations actually began in December 2013). The Center engages a consortium of two-year colleges, high schools, universities, industry partners in the states of FL, SC, NC, MS, TN, KY, GA, and AL. The participating entities have committed to join forces in creating a secondary-to-postsecondary "pipeline" of highly qualified and strongly motivated students and empowering community colleges to meet the urgent need for technicians in lasers and fiber optics. LASER-TEC also has national responsibility for curriculum, teaching materials, technical assistance and faculty training in fiber optics and spectroscopy.

Laser-TEC serves two types of two-year postsecondary programs (and partner high schools):

1. Those devoted to lasers and fiber optics technology, and
2. Those devoted to technologies that are enabled by lasers and fiber optics technology

Commendations

General:

1. LASER-TEC is commended for the commitment and involvement of the competent management team (PI, CoPIs, Partner Colleges, etc.) involved in the project and the administration and staff involved at each partner college.
2. LASER TEC is commended for the excellent and competent staff.
3. IRSC is commended for the strong Institutional support to the LASER-TEC Center.
4. LASER TEC has excellent laboratory facilities
5. LASER TEC is commended for outreach/communication of program existence, goals, value, etc.: professionally marketed via flyers, brochures, and website.
6. The Center is well on focused on its overall mission to *develop a sustainable pipeline of qualified laser and fiber optic technicians to meet industry needs.*
7. LASER-TEC is commended for the partnerships with Corning and the aggressive pursuit and leadership in fiber optics technician education.
8. LASER-TEC PI Chrys Panayiotou is commended for cooperative and complementary partnerships with OP-TEC, to maximize breadth and impact on photonics education throughout the country, as well as the Southeast.
9. LASER-TEC is commended for Gary Beasley's efforts to support OP-TEC's PST curriculum and teaching materials.

10. LASER-TEC is commended for its outreach, collaboration and leadership with other ATE centers and projects including the upcoming 2014 HI-TEC Conference.

Under Goal 1

11. LASER TEC support provided to partner colleges has resulted in unique and appropriate technical specialty developments at each institution.
12. The Center is using its partner colleges to build their employer network in each sub-region.
13. The Center has the appropriate amount of delegation of responsibility and accountability to partner colleges – allows flexibility to the sub-region to tailor programs to their individual area needs.

Under Goal 2

14. The initial public information provided by LASER-TEC has effectively represented its goals to the public and non-partner colleges.
15. LASER TEC is generating regional college interest by developing clear and reasonable guidelines for non-partner colleges to obtain sub-grants.
16. The Center has developed and is providing access to a database of employers in each sub-region.
17. Good academic and technical balance has been encouraged for programs developed.
18. The Center has developed a strategy and targets to achieve in providing startup support.

Under Goal 3

19. LASER TEC is employing multiple tactics to develop interest in K-12: emails, mailings, public announcements, etc.
20. LASER TEC provides and supports one-day optics seminars for K-12 teachers.
21. The Center has developed and is providing high schools an innovative and effective Optics Kits for K-12 as training materials for a minimal cost. (<\$55.00)
22. LASER TEC is effectively partnering with multiple levels of education system – teachers, administrators, superintendent.
23. The Center is developing a strategy to network teacher involvement.

Under Goal 4

24. LASER TEC has set up the framework for a program of veteran outreach, identified target military careers, and is continuing to communicate with appropriate veterans organizations.

Under Goal 5

25. The Center has identified industry partners in each state, based on existing databases and advisory committee members of partner colleges, as well as networking efforts at Photonics West.
26. LASER TEC identified industry volunteers to help champion industry and regional college partnerships
27. LASER TEC has initiated excellent involvement with the Orlando Science Center to support, advertise, and display Photonics material from LASER-TEC.

Under Goal #6

28. The Center is making progress defining and identifying industrial advisory board and

defining industrial partnership network.

29. The Center is planning studies to identify demand and skill-set information.

30. The Center has conducted surveys (through Jim Pearson) to identify LFO technician needs.

Recommendations

General

1. LASER-TEC has a well-organized, well-qualified team. The NVC recommends LASER TEC continue to pursue goals including:
 - Center organization and partner development
 - LFO course development
 - Visibility and outreach efforts
 - New College recruitment
2. Consider providing support in fiber optic and spectroscopy course/program development to all interested colleges throughout the U.S.; not just in the SE region.
3. Provide more assistance in retraining the unemployed.
4. Provide continuing professional development for faculty at the technician level.
5. The NVC could find no evidence in the evaluator report that the proposal evaluation process is being followed. Evaluator's report was primarily a "Progress Report"; not an "Evaluation Report". The evaluator should not only describe the "what", but also the "how", "success" and "impact". The NVC expects the Evaluator to include metrics and examples supporting the goals and their impact. Show us the numbers... hard data.
6. Schedule a teleconference with LASER TEC NVC in August/September timeframe to update year 1 accomplishments.
7. NVC is open to meeting in late May or June 2015 as best suits LASER-TEC needs
8. Prior to September 2014, identify what studies the evaluator will be conducting in year 1 and 2. Share this with the NVC in the proposed T/C.
9. Develop monographs and guides to assist educators in adopting successful models for implementation.
10. Review budget expenditures— salaries, procurements, sub-contracts...
11. Provide summary table indicating number of veterans, number of new regional partner colleges. Update the information on an annual basis.
12. Call on NVC members to support LASER TEC initiatives, where we could be useful.

Under Goal 1

13. Work to provide and encourage availability of LFO Partner College resources for the use of other schools and colleges in the SE. Consider sharing with other colleges the use of expensive equipment that could be easily transported. Also consider Partner Colleges providing capstone labs at their institutions when availability and/or movement of resources aren't practical.
14. Provide list of available webinars and other useful training resources to LFO partner colleges and others in the SE region.
15. Attempt to develop relationship with BISCI

Under Goal 2

16. Consider developing online training to prepare faculty to teach Spectroscopy and Fiber Optics courses.
17. Develop appropriate training material in Spectroscopy and Fiber Optics. If adequate, high quality materials are already available, develop faculty guides to support teaching of these materials, which would include learning objectives, problems, lab activities, as well as lab organization and equipment lists.
18. Identify the support that LASER TEC will make available and communicate as appropriate, possibly through a bulleted list? Build on what has already been developed and available in the LASER TEC website.

Under Goal 3

19. Continue to expand training for K-12 STEM teachers by providing a model of the training you have developed that could be used by Partner Colleges and others.
20. Consider developing an event where employers host parents of students interested in STEM careers.
21. Consider the use of social media to bring information and awareness of Laser and Fiber Optic education
22. Consider development of summer camps for Middle and High School students
23. Observe safe operating laser safety practices, goggles, etc. Do not use pictures that show students in labs without safety goggles.

Under Goal 4

24. Evaluate the effectiveness of the strategies you have for recruiting females, minorities and veterans; if necessary, develop new strategies that may be more successful.
25. Consider using veterans to recruit veterans. (Consider social media, YouTube, etc.)

Under Goal 5

No recommendations

Under Goal 6

26. The NVC believes that managing a large group (>100) of employers for meetings, focus groups, dialog etc. can best be done by selecting from among them a “core group” of leaders as the “Advisory Board”, and establishing and deliverables from them.

Conclusion

The NVC is impressed with the hard work, dedication, and contributions of the LASER-TEC team. Our impression is one of committed and innovative people who believe strongly in the Center vision and mission.

LASER TEC has achieved remarkable accomplishments during this brief (six month) startup period. We note particularly the hard work and commitment of Chrys Panayiotou and the other PIs, as well as staff members Natalia Chekhovskaya, Lauren Hays and Will Keiser

The NVC concludes that confidence in LASER TEC is high, and that based on our observations this Regional Center will continue to be successful.

Respectfully submitted,
LASER TEC National Visiting Committee,
Dan Hull Chair

