

Alex Fong

From: Florida Photonics Cluster [afong@olinet.com]
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Florida Photonics Quarterly

The Florida Photonics Cluster Newsletter

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FROM THE PRESIDENT -- Alex Fong

Amidst widespread concern about the impact of a larger economic crisis, we are pleased to report strong turn out at four major optics/photonics conferences this year: SPIE's BiOS/Photonics West, the Aerospace Lighting Institute's Annual Meeting, Pennwell's Strategies in Light, and SPIE's Defense, Security & Sensing all saw bustling attendee traffic at their respective exhibits, and there was a lot of interest from attendees. That said, there continues to be pessimism in the media and amongst the public regarding the outlook for businesses. It is important at such times, however, to take a step back and not let circumstance overwhelm us and paralyze us from doing our level best.

At a recent technical society meeting, a colleague reminded me of the similarities between the current economic crisis and that of the precipitous decline of the optical networking bubble in 2001 and onward. Those in the industry at that time will recall the plant closings, massive divestment, and layoffs. Although that downturn was confined mainly to only a segment of the economy, it had significant collateral effects such as declines in broad local economies in tech centers from Ottawa to San Jose to Shenzhen, and its impact was serious enough that the equities market regarded the term "photonics" as toxic. Stocks saw massive declines, and gone was the exuberance in and confidence at firms such as JDSU and Corning.

Although the circumstances are different, there are some important lessons learned then we can apply today. For one, it will improve. Now as then, eventually consumption returns and with it investment. Growth follows, jobs lost are recreated, and new opportunities are born. Innovation finds new homes. Those firms that survived managed to fill a need that by then was underserved. Most recently, those technologies are now spawning a new area in medical and life sciences technologies,



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redefining the field of biophotonics and demonstrating how it can address needs in a unique way that no other technology could using components developed during the telecom boom.

Of those who left the photonics field, they found new opportunities. Some became entrepreneurs and formed companies, while others applied skills developed to enter new application areas. Many of those who survived and remained are now in leadership positions, much wiser for the experience than those who came before.

Another lesson came from my wife. In those most dire days when layoffs were happening on a weekly basis all around us and I felt beaten by it all, my wife asked me to have faith. She explained that she meant not faith in religious terms, but faith in me - faith that I and everyone around me would have the strength and intelligence to make it through regardless of what happens. She was right. She usually is, and I think that is the most important lesson of all. I think more than ever it is time we had some faith in ourselves. With that and the belief that we can weather this storm, we will be able to look back on this someday as another lesson learned.

"Let me tell you the secret that has led me to my goal. My strength lies solely in my tenacity." - Louis Pasteur

Interview with Keith Riffée, Triple Play Communications

Keith Riffée is the President and a Founder of Triple Play Communications (TPC), which designs and manufactures custom products targeting innovative optical and electronic technology applications.



Keith has over 20 years of technical and management experience developing complex communications systems and telecom equipment. Previously, he managed all aspects of the telecom fiber optic transponder and transceiver product line while at JDS Uniphase, including all product marketing and development. He also held various levels of engineering management positions at Harris Corporation which included communications systems and software organizations. Keith has a B.S.E.E. degree from the University of Virginia and received an M.B.A. from the Florida Institute of Technology.

A busy guy -- we were recently fortunate enough to have the opportunity to sit down and talk with Keith.

FPC: Tell me a little bit about how your company started?

KR: Triple Play Communications (TPC) was formed by three JDS Uniphase employees, Keith Riffée, Jim Wernlund, and Rafael Martinez, in July 2006 immediately after JDS Uniphase shut down their Melbourne, Florida site. This team had a proven track record developing, qualifying, and producing telecom optical modules and wanted to utilize those skills by providing custom optical and electronic design and product manufacturing services. TPC was able to take advantage of the JDS Uniphase site liquidation by purchasing a variety of high quality optical test equipment for a fraction of the original cost. However, as with most bootstrap-financed companies, our first engineering lab was in a garage. Over the past three years TPC

has grown to five full time employees, adding Tuanc Diep and Terry Lonsway, plus six part time contractors, and has moved into 3,000 square feet of office and lab space. We now maintain a full suite of high speed optical and electrical test equipment as well as large environmental chambers for lifetime qualification and production testing.

FPC: What were the main obstacles experienced?

KR: As with most new startup businesses, the two main obstacles we initially faced were the lack of an established customer base and the lack of financing. Since many optical companies were reducing their internal engineering resources during this time, we used our extensive list of personal contacts, developed over many years at JDS Uniphase, to market our design services while targeting companies whose internal resources were no longer sufficient to complete all planned R&D projects. We were fortunate to win several development projects very soon after forming TPC, which allowed us to build our reputation and provided additional time to find new customers.

In order to overcome a lack of external financing, we kept all expenses and overhead costs to a minimum while using a garage as our engineering lab for nearly a year. Additionally, we funded the business by not taking a salary and only being paid when there were sufficient funds available from our revenue generating projects. As we were able to win more business, we prioritized our spending in order to lease the appropriate amount of office and lab space as well as purchase the necessary test equipment to expand our development capabilities.

FPC: What differentiates you from your competitors?

KR: One of TPC's key differentiators is our responsiveness to any type of customer request or feedback. We provide 24/7 support for any customer or potential customer email, phone call, or voice mail and we typically respond within minutes for any urgent request or situation. Obviously this is easier for TPC since we are a small company but as we grow, our customer responsiveness will continue to be a high priority and a way to differentiate ourselves from the competition.

Another key differentiator for TPC is the design flexibility and speed that we bring to development projects. Each of our five full time employees has many years of experience in both defense communications systems design and high volume telecommunications module development. Every member of our team typically performs multiple roles during a given project, thus allowing us to efficiently execute developments with a lower overall engineering headcount, and allowing fewer opportunities for problems to arise due to miscommunication or lack of coordination between team members.

Whenever possible, TPC develops products with flexibility built into the electrical, optical, mechanical, and/or software designs. We understand that requirements may change over time and we strive to design in as much flexibility as possible without increasing the overall cost of the product. This allows us to quickly adapt to customer requirements changes and, in many cases, incorporate these changes with no impact to cost or schedule. We have found that customers appreciate the speed

with which TPC can execute projects and the flexibility we provide during the development process. Similar to our customer responsiveness mentioned previously, we will place a high priority on maintaining these key differentiators as TPC expands in the future.

FPC: How are you coping with the current economic conditions?

KR: As a prudent first step during these challenging economic times, TPC has significantly cut expenses in an effort to conserve financial resources as much as possible. This means that only purchases for test equipment and supplies directly needed for execution of current projects can be made. We have temporarily discontinued the use of external contractors whenever possible and are performing all design work internally. During this time we have increased our marketing efforts in an effort to expand our customer base when the economy begins to turn around. We anticipate a greater demand for TPC's custom design and product manufacturing services when economic conditions begin to improve due to the significant reduction of internal resources most companies have recently experienced.

FPC: Thoughts on where you are headed in the future?

KR: For the future, TPC plans to continue adding customers in both the defense industry and commercial sector. We have already begun the transition from developing only fiber optic module products to more complex chassis level designs. We plan to continue that focus on customized chassis products since standard fiber optic modules are becoming more of a commodity. Chassis level products allow TPC to expand its technology base since these designs require engineering from various disciplines such as optical, electrical, firmware, mechanical, as well as software to provide remote Ethernet control and status capability. As TPC grows, we plan to add engineering resources whose background is similar to the current team (defense and commercial experience) in order to maintain our core competencies and key competitive differentiators. At the appropriate time and based on market demand, TPC may begin to offer its own products to fill a niche not addressed by other manufacturers.

FPC: Thanks for for taking the time out to talk to us!

KR: My pleasure!

PHOTONICS ACADEMY Created to Address Photonics Workforce Needs in Metro Orlando

-- Gloria LeQuang Metro Orlando Economic Development Commission

As a nationally recognized leader in the photonics and laser optics industry, Metro Orlando is home to a strong and qualified workforce in this area. Much of this is thanks to the University of Central Florida's College of Optics & Photonics (CREOL) and its two research centers -- the Center for Research and Education in Optics and Lasers (CREOL) and the Florida Photonics Center for Excellence (FPCE) -- one of the world's top graduate institutions in optics and



photonics education and research that provides students with masters and doctoral degrees. Yet, there remains a strong need for qualified workers with a two year degree to work as laser technicians in the photonics industry both here in Metro Orlando and across the U.S.

In response to this strong need, Northrop Grumman Laser Systems, several local optics companies, and the Metro Orlando Economic Development Commission (MOEDC) began working with Valencia Community College (VCC) and Orange County Public Schools (OCPS) to address the workforce dilemma in Central Florida. In response, the Photonics Academy was created.

Through the Photonics Academy - slated to begin at the beginning of the 2009-2010 school year - high school students interested in careers as laser/photonics technicians will be dual enrolled at their high school and VCC. Upon graduation from high school, students will also receive their A.S. degree in photonics from VCC.

This will allow the graduates to immediately enter the workforce, with high-tech, high-wage jobs, instead of spending two more years earning the A.S degree. Many photonics companies in Metro Orlando also offer tuition assistance programs, allowing the technicians to earn higher degrees with little or no out-of-pocket expense.

The newly created Photonics Academy is just another great example of Metro Orlando's dedication to our established cluster of photonics companies.

For more information, click here:

<https://www.ocps.net/lc/north/hwe/Documents/Laser%20Photonics%20Brochure.pdf> or contact Mark Blackington at Northrop Grumman Laser Systems at (321) 354-3790.

New Florida Training Programs for Photonics Technicians!

As noted in the previous article, a critical need of the Florida photonics industry for many years has been a reliable local supply of technicians skilled in photonics. In fact, this need is nationwide - a fact detailed first in 2003 by CORD (Center for Occupational Research & Development) that revealed ~1,800 new (or retrained) photonics technicians are needed each year, but the nationwide supply was only ~200 annually. This need was updated in 2009 by OP-TEC (NSF-funded National Center for Optics & Photonics Education), which indicated ~6,000 open photonics technician positions nationwide and a supply of only ~600 annually.

To address this need, several Florida-based programs are now underway. Two Florida colleges have developed photonics tracks within their AS-EE and AAS-EE degree programs: Valencia Community College (see <http://valenciacc.edu/asdegrees/engineering/eet.cfm>) and Indian River State College (see <http://faculty.ircc.edu/dept/advancedTechnology/ee/course.htm#LasPhot>)

In addition to these 2-year degree programs, 2 new programs have recently begun development in addition to the **Photonics Academy** (see previous article): the **Photonics Technician Certificate** program and the **Photonics Technician Certification** program. The FPC has endorsed and is supporting both of these new programs.

The Photonics Technician Certificate program has just been approved for funding through Workforce Central Florida. The funding for the PTC program is part of the American Reinvestment and Recovery Act of 2009 that was signed into law by President Obama on February 17, 2009. The purpose of the Recovery Act is to preserve and create jobs, promote the nation's economic recovery, and to assist those most impacted by the recession. The PTC program will provide a series of online and classroom courses that lead to a Photonics Technician Certificate. The program is led by the Continuing Education department of the University of Central Florida, with several program partners including the FPC, CREOL, SPIE, and OP-TEC. Although the target audience is initially unemployed and disadvantaged persons, it will be open to all interested and qualified applicants. Full information on the PTC program will be available shortly and posted on the web and on the FPC website. For information, contact Maria Chrejovsky, mariac@mail.ucf.edu or Jim Pearson, jpearson@creol.ucf.edu.

The Photonics Technician Certification program has also just been approved, with funding from the state level -- Workforce Florida. This proposed program will develop the necessary criteria for certifying and recertifying photonics technicians, and will establish the process for maintaining, updating, and administering the certification program to meet the needs of Florida industry.

Both the Certificate and Certification programs will be driven by industry needs, obtained via surveys (look for one soon!) and by an Industry Advisory Council. In addition to the FPC and its industry members, a key partner in the programs is OP-TEC, the NSF/ATE National Center for Optics & Photonics Education. For information on these programs contact, Jim Pearson, jpearson@creol.ucf.edu.

SAVE THE DATE: FPC meeting, Tuesday, July 21, 2009

Mark your calendars for Tuesday, 21 July for a meeting for FPC members and prospective members.

The program will start at 4pm, and will include two seminars: (1) programs, capabilities, and products at our host company, Northrop Grumman Corporation - Laser Systems in Apopka; (2) status of several training programs for photonics technicians, a tour of the NGC/LS facilities, a hosted reception, and a no-host networking dinner after the meeting.

Please RSVP by email to Jim Pearson - jpearson@creol.ucf.edu to indicate your attendance so we have a head count for the meeting, and also please indicate your interest in going to dinner after the meeting. More details on the meeting and dinner will be sent soon.

CHECK OUT THE FPC BLOG-SITE!

[Ask Questions, share your thoughts and find out what's happening in Florida Photonics at www.floridaphotonicscluster.blogspot.com!](http://www.floridaphotonicscluster.blogspot.com)



JOIN FPC'S NETWORK ON LINKEDIN!

[Don't miss the new FPC network established on LinkedIn!](#)



A Florida Photonics Cluster Group has been established on "LinkedIn." LinkedIn is a business-oriented social network service, mainly used for professional networking. As of December 2007, its site traffic was 3.2 million visitors per month, growing at an annual growth rate of about 485%. As of March 2008, it had more than 2 million registered users spanning 150 industries. There are other similar sites, but LinkedIn is by far the largest, best known, and most popular.

The way it works is that members post professional information much like an online resume. The site will analyze the data and suggest people you might have met or worked with in the past and start compiling a network of contacts that it can keep you posted on. In turn, others on the network can invite you to join their network, which then connects you to other potential people in your industry that you can draw upon. It automates the networking process allowing you to efficiently make connections through those you know to people and companies/organizations you seek to further a relationship.

Creating a group for the FPC fulfills part of our charter to create opportunities for networking. Several individuals from FPC member companies have joined the LinkedIn FPC network.

[Join the FPC network on LinkedIn today!](#)

<http://www.linkedin.com/e/gis/89774/0F904052D5CC>



CREOL Industrial Affiliates Day 2009

The annual Industrial Affiliates Day at CREOL, The College of Optics & Photonics was held April 17, 2009 with the program theme: "High Power Optical Sources for the 21st Century". For full program details and to view the invited presentations, go to

<http://www.optics.ucf.edu/Partnerships/Affiliates/Members.aspx> and click on "Affiliates Day" in the left column.

JOIN THE FPC TODAY!



[Enjoy the benefits of FPC membership!](#)

[Why Join FPC? To Make Money!](#)

Benefits of FPC Membership:

- Identify common needs and interests
- Leverage to develop opportunities through joint efforts, pooled resources and knowledge
- Regional, Statewide, National and International Reach Small, Medium, Large Corporations, Academe, and Government all Benefit!

FPC Membership Benefits Include:

- The strength of a unified industry voice providing a platform for local and state legislative support
- Visibility for your company through FPC's website, marketing literature, and trade show displays with member spotlight on companies and products and opportunities to participate in state and national sales and marketing efforts
- Liaison opportunity with other international photonics organization such as other photonics clusters (Arizona, Rochester, UK), scientific societies (OSA, SPIE) and industry trade organizations (OIDA).
- Networking opportunities through annual and regional membership meetings
- Discounts (10%) on exhibit space and other special benefits at SPIE and OSA conferences. Typical benefit per show start from over \$300 (10' X 10' booth) and \$600 (10' X 20' booth).
- Discount of \$300 to the membership rate with the Industrial Affiliates Program of the University of Central Florida's CREOL, The College of Optics and Photonics
- Admission to all Florida Photonics Cluster Events included in membership
- Access to service providers that can assist your company with the actions that are necessary for sustaining your business such as banks, suppliers, and professional marketing, communications and legal services organizations at preferred rates
- An expansive resource base that includes partnerships with Enterprise Florida, area economic development organizations, the

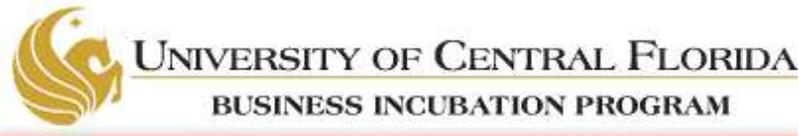
Florida High Tech Corridor Council, and CREOL, to provide access to incentives and business development programs and research

- Assisted access to venture capital and opportunities to help develop Florida photonics companies into worldwide participants
- Opportunities to participate in the curriculum development in state universities and community colleges and advanced access to Florida's best and brightest students and the additional ability to recruit nationwide through the FPC website

[Join FPC today and enjoy the benefits of membership!](#)
[For more information, visit floridaphotonicscluster.com.](http://www.floridaphotonicscluster.com)

WELCOME NEW FPC MEMBERS!

FPC's newest members:



[The Florida Photonics Cluster \(FPC\) Website now accepts donations, member dues, and other payments through PayPal \(http://www.paypal.com/\).](#)

PayPal is a fast, convenient and safe way to make online purchases and transactions. You can pay without revealing your credit card or bank information! Note that submission of a membership application is still required for new applicants joining the FPC, and for updating renewing memberships.

Greetings FPC Members and Friends,

The Florida Photonics Cluster is designed to support the growth and profitability of the Florida photonics industry through the strength of a unified voice to make Florida the place to go for photonics solutions. The FPC is dedicated to enhancing the industry through effective collaboration by bringing together the knowledge, expertise, and service that each of its members organizations has to offer.

FPC Goals

- Foster the expansion and growth of Florida's optics and photonics industry by partnering with economic development organizations, the state universities, and community colleges, and local and state governments.
- Market Florida's optics and photonics companies worldwide.
- Facilitate and provide a means of communication within the business community.
- Partner with the Florida education community to enhance and develop a competent statewide optics and photonics-based workforce.
- The FPC is a 501c(6) not-for-profit corporation, registered with the Florida State Division of Corporations.

[For more information, visit www.floridaphotonicscluster.com today!](http://www.floridaphotonicscluster.com)

Sincerely,

Alexandre Fong, President
Florida Photonics Cluster

Jim Pearson, Executive Director

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