



Florida Photonics Update

The Florida Photonics Cluster Newsletter

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September 2015

FROM THE PRESIDENT - Alex Fong



While it is natural to feel disappointment over the decision to award the \$110 million matching grant by the Department of Defense to establish the Integrated Photonics Institute for Manufacturing Innovation (IP-IMI) to the the Research Foundation of the State University of New York (SUNY) over our PRSIM group led by the University of

Central Florida (UCF) team I think that the exercise reminded us all of the talent and assets we are privileged to possess. However, while there is much deserved praise there were some clear lessons to be learned here if we are to successfully undertake future endeavors such as the IP-IMI competition.

These include the need for overwhelming support from the state. The PRISM proposal highlighted the \$120 million in investments already made by UCF, Osceola County, the Florida High Tech Corridor Council and Enterprise Florida and words of encouragement from some state representatives including John Mica, Dan Webster, Alan Grayson and Senator Bill Nelson. However, the NY proposal came with strong and vocal endorsements from New York Governor Andrew Cuomo and the state's two senators, Charles Schumer and Kirsten Gillibrand. More importantly it included a commitment of \$200 million for equipment and \$50 million over 5 years for operations with announced additional support from corporate partners including GE, Lockheed Martin, and Intel. And while the PRISM proposal included institutions from IL, AL, NC, SC, and GA, NY's consortium had participation spanning the country including from groups in CA and AZ.

Ultimately, as one of the last two finalists it was also an affirmation of the world-class level of excellence that we have together achieved in photonics, here in Florida in a relatively short time. Consider that so much of it was built in the last thirty or so years! While NY State has benefited from investment in the optics industry going back over a hundred years, the vision that became CREOL for example and spawned Bill Schwartz the founder of the FPC along with Governor Bob Graham, MJ Soileau and Eric Van Stryland only began to take shape in the mid-eighties! The proposal the team submitted highlighted all these things we know well: that we have an extraordinary and innovative combination of industry, academic and economic development organizations partnered and focused on success. I want to personally send our thanks to the entire PRISM team (composed of more than 115 industry/academic/workforce/economic development partners offering \$127M in support) led by Dr. Winston Schoenfeld and University of Central Florida (UCF) and CREOL for all their incredibly hard work. You are part of what makes us great!

Most importantly, I want everyone to remember that there is every indication that best is yet to come!

Member Company Spotlight: UCF - International Consortium for Advanced Manufacturing Research - ICAMR

As noted in our November 2014 newsletter, The University of Central Florida has partnered with Osceola County and several other partners to establish a



Fran Korosec
Director, Program
Mgmt Office,
ICAMR

down with Fran responsible for operations including program/project management, stakeholder/funding organization relationship management,

state-of-the-art research and incubation facility focused on the next generation of universal smart sensors. The ICAMR - www.icamr.net -- serves as a one-stop shop for development and integration of advanced devices and materials (processes, tools, prototyping, EDA), providing access to a wide variety of materials (e.g., GaN, InGaN, and other III-V materials).



To learn more, we sat
Korosec who is
ICAMR's business

deliverables management, and general coordination of programmatic activities.

Korosec brings more than 25 years of experience in management consulting, integration services, technology development, & manufacturing. He is a seasoned executive with a unique combination of business development/sales, program management, and technical expertise. He has held various roles throughout his career including Lead Consultant, Business Development Executive/Principal, Vice President of Business Development & Marketing, Manager of Business Development, Executive Director of Software Marketing, Executive Director of Integration Services, Director of Software Development Projects, Program Manager, Systems Engineer, and Manufacturing Engineer.

Prior to ICAMR, Korosec has worked as an independent consultant for organizations including the University of Central Florida, Tavistock, and the National Center for Simulation. He also held positions at various companies including North Highland Management Consulting, Lockheed Martin, IBM, and Bell & Howell.

Korosec holds a Master's degree in Industrial Engineering (State University of New York at Binghamton) and a Bachelor's degree in Mechanical Engineering (Clarkson University).

FPC: Tell us about ICAMR. Why was it created and how did it start?

FK: ICAMR comes from the University of Central Florida's vision to establish a manufacturing development capability in Central Florida. This vision comes from Dr. MJ Soileau. Dr. Soileau, working with former executives of SEMATECH, Dan Holladay and Dave Saathoff started having conversations about creating a manufacturing development consortium over 5 years ago - the technology focus did not evolve to advanced sensors until 2013. Jumping forward to the summer of 2014 is when things really got started. UCF, working to secure regional support, found a great partner in Osceola County. In June of 2014, Osceola County committed significant funding toward providing the land and construction of the Florida Advanced Manufacturing Research Center. The county will own the facility and will lease it to UCF for 30 years for \$1/year. UCF, in turn, will operate the facility via the ICAMR consortium. Beyond the R&D benefits in advanced sensors, the

economy benefits via the creation of thousands of high-tech jobs in Florida.

FPC: What are some challenges you face today? How are you coping with the current economic conditions?

FK: We are a startup organization. As such I would characterize our challenges in finding the opportunities that all startups have - startup funding and customers.

Of course, startup funding is always at the top of the list. We have had the fantastic support of UCF, Osceola County, the Florida High Tech Corridor Council, Enterprise Florida, University of South Florida, University of Florida, and Florida International University. Combined, their total committed investment in ICAMR is approximately \$168M. These funds cover the design/build of our new 100ft² manufacturing development facility, the land and utilities infrastructure in Osceola County where the facility will be located, tools/equipment for the new facility, focused faculty hires at UCF, and pre-startup funding for ICAMR's staff. With that said, we are actively pursuing other funding sources via the state legislative process, federal grants, and other sources. These funds will help us bridge a gap in time as we develop our consortium membership and revenues resulting from this activity.

Our other challenge is in recruiting members to the consortium. We initiated pursuing customers within the last 8 months and we are now at a tipping point in this area. We will soon be announcing that ICAMR has its 1st consortium member. We expect others will follow soon after. As you can imagine, pursuing members is a major business development effort in that we are out selling the value proposition of the consortium in return for membership and service fees. We are specifically targeting aerospace/defense, healthcare, oil/energy, and manufacturing sectors. We believe these markets have the greatest opportunity for the technology advances we will be making.

FPC: What distinguishes you from similar organizations?

FK: ICAMR's unique discriminators in the advanced sensor and integrated photonics space are the platform in which devices will be manufactured and the use of III-V materials on a silicon wafer. ICAMR's capabilities will allow manufacturing develop

ment on 200mm size wafers. When you combine the wafer size and the use of III-V materials on silicon, now you have something unique. Other organizations may be using III-V materials, but they are doing so on smaller size wafers which do not scale for higher volume production needs. Therefore, ICAMR can conduct manufacturing development activities, proving out processes and tools, that will immediately transfer to a high volume production facility.



FPC: What types of partners are ideal?

FK: We breakdown partners into Core Industry Members, Associate Members, and National Lab/University members.

Core Industry members will be the life blood of ICAMR. It is for these partners that we have stood up the organization. ICAMR's objective is to prove out manufacturing processes, tools and methods that provide industry the ability to scale manufacturing of advanced sensors and photonic devices.

Associate members include those in the supply chain for producing these devices. These include tool/equipment vendors and chemical and gas suppliers. If we have industry sitting at the table, the associate members will be motivated to work with ICAMR and industry so their products and services evolve to meet the needs of industry.

Finally, but not least, are the university and national labs. We are pursuing these organizations for 2 significant reasons. First, these organizations are doing the basic and applied research that ICAMR can help become producible for high volume manufacturing. ICAMR, with the knowledge of what it's industry partners need, will pull the research from the universities and national labs to meet industry need. Second, universities and national labs all have their own internal processing capabilities. It is in ICAMR's best interest to work with these partners and leverage their existing capabilities as opposed to having ICAMR invest in tools/equipment that exist someplace else.

FPC: Can you cite some good case studies/examples of past successes?

Since we are a new consortium, it is too early to point to ICAMR case studies. However, the ICAMR business model is based on best practices taken from organizations like SEMATECH, IMEC, Fraunhofer and LETI. Each of these organizations operates manufacturing development consortiums, albeit with a different technology focus, like that we aspire to become.

FPC: Future plans?

FK: Our future plans are straight forward:

- o Secure additional startup funds
- o Grow a robust consortium membership from industry and the supply chain
- o Complete our facility working with Osceola County by early



2017, and be prepared to ramp up ICAMR's manufacturing development operations during the 1st quarter of 2017.

Florida is THE place to go for entrepreneurs and startup companies as well as established companies

The Small Business & Entrepreneurship Council ranked Florida among the nation's Top 5 most entrepreneur-friendly states. [Read more >>](#)

Business Resources Are Among the Best in the Nation

The Florida High Tech Corridor - www.floridahightech.com

Stretching across 23 counties, the Florida High Tech Corridor is a technology rich region known as much for its legacy in aerospace as it is for its growing prominence in other high tech clusters of innovation such as Modeling and Simulation, Optics and Photonics, Digital Media and Medical Technologies. As an entity that promotes the high tech growth of the region, the Florida High Tech Corridor Council is an economic development initiative of three of the country's largest research institutions-the

University of Central Florida, the University of South Florida and the University of Florida. The Council's mission is to grow high tech industry and innovation through partnerships that support research, marketing, workforce and entrepreneurship.

Orlando Economic Development Commission (OEDC) - www.orlandoedc.com

The OEDC is accredited by the International Economic Development Council (IEDC) as a an Accredited Economic Development Organization (AEDO), joining the top 1 percent of economic development organizations that are accredited by IEDC.

Florida Defense Contractors Association (FDCA) - www.fl-dc.org The FDCA is a statewide, state-focused business development, education, and advocacy group for Florida defense businesses of all sizes, promoting the business interests of Florida defense contractors through its focused, statewide activities.

GrowFL -- www.growfl.com GrowFL provides strategies, resources and support to second-stage companies for next level growth, supporting companies with Strategic Research and peer-to-peer CEO mentoring. GrowFL has assisted more than 700 companies with its programs.

Enterprise Florida -- www.enterpriseflorida.com Enterprise Florida, Inc. (EFI) is a public-private partnership between Florida's business and government leaders and is the principal economic development organization for the state of Florida.

Florida Virtual Entrepreneur Center (FLVEC) -- www.flvec.com The FLVEC web portal serves those looking to start, grow or relocate a business in any of Florida's 67 counties. In addition to helping Florida-based companies, the site's expansion services provide businesses outside of the state the tools they need to set up offices in Florida.

National Business Incubation Association -- www.nbia.org
The National Business Incubation Association (NBIA) is moving its headquarters from Athens, Ohio, to Orlando this fall. **NBIA selected Orlando for its reputation as the home of entrepreneurship and innovation.**

[Florida Ranked No. 5 in Tech Job Creation by Dice.com](#)

In August 2015, the tech job site ranked Florida as #5 among 17

states on its list of fastest-growing states for tech jobs, ahead of even California.

Florida's Education Resources are National leaders

The State of Florida is a national leader in education reform policy, according to a report by Students First. [Read more >>](#)

The University of Central Florida and five other public Florida universities have been rated among the best values in the nation by Kiplinger's Personal Finance in its 2013 ranking of Top 100 public colleges and universities. [Read more >>](#)

According to the National Science Foundation, Florida universities earned top national rankings for doctorate degree graduates in fields like Life Sciences (#3), Engineering (#5), Social Sciences (#7), and Education (#9). [Read more >>](#)

CREOL, The College of Optics & Photonics is a world-renowned graduate college for optical science and engineering education and research. The College offers interdisciplinary graduate programs leading to BS, MS and Ph.D. degrees in Optics. CREOL (Center for Research and Education in Optics and Lasers), FPCE (Florida Photonics Center of Excellence), and the Townes Laser Institute are research centers within the College. [Read more >>](#)

Indian River State College In Ft. Pierce, FL is home to the [Southeast Regional Center for Laser and Fiber Optics Education, LASER-TEC](#), a National Science Foundation Advanced Technological Education Center comprised of community and state colleges, universities, high schools and technical centers, trade associations, and laser and fiber optic (LFO) companies. LASER-TEC has the goal of developing a sustainable pipeline of qualified laser and fiber optics technicians to meet the industry demand across the southeast region.

WELCOME NEW FPC MEMBERS!

The FPC is delighted to recognize the companies that have joined the FPC so far during 2015:

- o [Laser Guardian LLC](#)
- o [Magnus Precision Mfg., Inc](#)

Information on these and all FPC members is on the web at <http://www.floridaphotonicscluster.org/florida-photonics-members/index.php>.

Utilize the services and discounts provided by FPC member supplier companies!

One of the advantages of FPC membership is the network of suppliers to our industry, and particularly the suppliers who have joined the FPC and some of whom offer discounts to FPC members. Here is a brief list; further information is on the FPC website under the Members listing.

- **[Fowler, White, Burnett, Attorneys.](#)**
- Provides a full range of Intellectual Property services
- **[Diamond Level Service.](#)** Event Design and Management services for trade shows, special events, conferences, and business presentations. Discounts are provided to FPC members.
- **[Coastal Cloud.](#)** Provides a 10% discount on their full range of services that include technology strategy & architecture, business process optimization, solution selection / configuration / implementation, user training & adoption as well as on-going solution administration.
- **[Laser Guardian.](#)** Provides a 10% discount on their full range of services that include testing laser systems for emissions above safe limits as defined by the FDA under regulation 21CFR1040, and assisting in developing laser safety programs compliant to state and federal regulations through implementation of the ANSI Z136.1 standard for the safe use of lasers.
- **[Laser Focus World & BioOptics World.](#)** Discounts provided to FPC members for ads in the magazines: 20% for print media, 15% for digital media.
- **[Laser Institute of America.](#)** Discounts provided on LIA membership when joining for the first time, on ads in LIA media, and exhibit space at LIA meeting events.
- **[OnTarget Web Solutions.](#)** Provider of internet marketing and web design services, including FPC web design and hosting.
- **[Optics Professionals, LLC.](#)** Professional recruiting services, representing companies and individuals in optics and imaging technologies and related industries.
- **[Williams & Associates.](#)** Provides wide range of promotional products and marketing services. 10% discount to FPC members.

In addition, if not yet a member, please urge your company to become a member of our partner associations:

- **[Florida League of Defense Contractors.](#)** A statewide, state-focused advocacy and networking group with the

mission to promote the business interests of Florida defense contractors and defense economic stakeholders.

- [Laser Institute of America](#). Corporate Members receive quantity discounts on all LIA products and services, reduced advertising rates in LIA's Journal of Laser Applications®, Membership Directory and LIA TODAY, a free web link from LIA's website to the web address, and a complimentary fifty word listing with company logo in LIA's annual Membership Directory.
- [Manufacturers Assoc. of Central Florida](#). A non-profit organization enhancing the manufacturing industry in Central Florida.
- [Orlando Economic Development Commission](#). The EDC provides key services and support, which range from relocation and expansion expertise to export counsel to long-term planning with our community partners.
- [OSA Industry Development Associates](#). OIDA provides a wide range of programs and services including: workshops, industry/roadmap reports, policy and funding advocacy, idea exchange sessions, professional networking activities, a multi-media publication and presentation archive, and exclusive member benefits.
- [SPIE Corporate Membership](#). The SPIE Corporate Membership program provides exhibition booth "priority points", discounts, brand exposure, business networking opportunities, as well as access to information, education, government relations, student outreach, and more.
- [CREOL Industrial Affiliates](#). The Industrial Affiliates program provides to industrial corporations, organizations, and individuals many benefits. FPC members receive a discount when joining the Affiliates with a cash donation.

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 for:

- Marketing and increased visibility of the photonics industry and FPC members through strategic marketing efforts
- Developing local and state executive and legislative support
- Interaction with economic development groups
- Workforce development, and advancement and improvement of educational infrastructure
- Obtaining group discounts
- Opportunities to participate in state and national sales and marketing efforts

And even more:

- Visibility for and ready access to your company through links from FPC's website, marketing literature, and trade show displays.
- An expansive resource network that includes partnerships with Enterprise Florida, area economic development organizations, the Florida High Tech Corridor Council, and UCF's CREOL, The College of Optics & Photonics to provide access to incentives, business development programs, research, and education.
- Annual and regional meetings of membership for networking
- Participation in optics/photonics-focused data collection with an annual survey monitoring the pulse of the industry
- Opportunities designed to develop Florida photonics companies into worldwide market participants
- Opportunities to participate in curriculum development at state universities and colleges
- Facilitated access to Florida's best and brightest students and the additional ability to recruit nationwide through the FPC website
- Membership Directory
- Visibility to potential customers
- Access to service providers that can assist your company and provide discounts

- Spotlight on member companies and products through periodic newsletter
- Several FPC member discount opportunities from photonics professional organizations, publishers, and service providers.

[Join FPC today and enjoy the benefits of membership!](#)

[For more information, visit](#)

<http://www.floridaphotonicscluster.org>



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

Card Systems is a fast, convenient and safe way to make online purchases and transactions via credit card. Note that submission of a membership application is still required for new applicants joining the FPC, and for updating renewing memberships. A link is provided from the new FPC website.

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.floridaphotonicsclust.org

Sincerely,

Alexandre Fong, President
Florida Photonics Cluster

Jim Pearson, Executive Director

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