



Entrepreneur Training Session

Industrial Liaison
Bernadeta Wysocka
Princeton University

ILO Retreat, Pittsburgh, June 19-21, 2012



NSF-ERC Cooperative Agreement EEC-0540832





Outline

- Entrepreneurship at Princeton University
- MIRTHE initiatives of interaction with industry and VC
- Entrepreneurship contests
- MIRTHE Support for Start-ups



Princeton Entrepreneurship Education

– Entrepreneurship Courses at Princeton University

✓ Undergrad and Grad- level courses:

- EGR 495: <http://commons.princeton.edu/kellercenter/2012/03/egr-495-the-lean-launch-pad.html>
- EGR 491: http://registrar.princeton.edu/courseofferings/course_details.xml?courseid=002518&term=1132
- EGR 497: http://registrar.princeton.edu/course-offerings/course_details.xml?courseid=012025&term=1132

✓ Students involved in active search for Princeton technologies with potential for commercialization (business plan)

– Entrepreneurship Lab @ Princeton - <http://kellercenter.princeton.edu/elab/>

- *summer (10 weeks) program, stipend*
- *work together with entrepreneurs, assigned mentors, participate in trainings and workshops.*

– Entrepreneur in Residence on campuses

- *make connections and use them as consultants for start-ups and feature business leaders, pitch contests*



EGR 495: SPECIAL TOPICS IN ENTREPRENEURSHIP - THE LEAN LAUNCHPAD

Students: Are you interested in starting your own company?

Then consider enrolling in the Keller Center's new fall course, EGR 495, Special Topics in Entrepreneurship: The Lean LaunchPad! Taught this coming fall by the 2012-13 James Wu'12 Visiting Professor in Entrepreneurship, Jim Horvath '76, the course provides real world, hands-on learning about what it's like to actually start a company. Taking the course will enable you to get your hands dirty talking to customers, partners, competitors, as you encounter the chaos and uncertainty of how a startup actually works. You'll work in teams and be paired with experienced mentors, learning how to turn a great idea into a great company. Watch this YouTube clip of Jim Horvath talking about the Lean LaunchPad.



Enrollment: by application only.
Prerequisites: interest and passion in exploring whether a technology idea can become a real company. Open to sophomores, juniors, seniors, and grad students.

APPLY ONLINE HERE
(Application deadline is Friday, April 20 at 5 p.m.)



MIRTHE Investment Focus Group

Mission: Introduce venture capital, angel and other investment professionals to mid-infrared technologies and applications opportunities

- A network of venture and angel investors seeking opportunities from MIRTHE technologies
- Provides introduction to students, faculty, promising start-ups, small businesses, and large end-user members
- Serves as a window and allows input into development of MIRTHE technologies and applications roadmap
- Joint assessment of technology readiness and approaches to commercialization
 - Formed in early 2010; Co-chaired by Dr. Mort Collins and Dr. Ralph Taylor-Smith of Battelle Venture
 - 23 board members
 - Annual workshops
 - Oct. 2010 – focused on MIRTHE all applications*
 - Oct. 2011 – medical applications*
 - April 2012 – defense and security (workshop at SPIE)*

Student benefits:

- get mentors
- attend meetings and workshops
- present oral presentations and posters
- networking with VCs



IFG workshop 2011



IFG workshop 2010 – poster session

- ❖ NOT an investment fund but could serve as a spring - board
- ❖ IFG strengthens the entrepreneurial aspect of MIRTHE industry program



Innovation competitions and meetings



NJ Entrepreneurial Network
networking and poster session
Princeton 2009



Industry Affiliates Day
Rice University 2009

Post-doc wins 2nd place at the
Pitch contest at Innovation Forum,
Princeton 2012



Graduate student wins 2nd prize
at Optoelectronics Start-up Challenge,
Photonics West 2012

- **Make connections with local entrepreneurial networks and agencies to organize joint workshops and meetings:**
 - ✓ NJ Small Business Development Center (SBIR workshops)
 - ✓ NJ Entrepreneurial Network (networking and poster session)
 - ✓ BioNJ (networking and poster session)
 - *low cost events*
 - *in return agencies bring their VC network to campus (e.g. entrepreneurs, company executives, venture capitalists, angel investors, investment bankers)*

- **Work with tech-transfer offices at partnering universities**
 - ✓ Industry Affiliates Day (Rice U.) – poster session, prototypes demo
 - ✓ Innovation Forum by Keller Center (Princeton U.) - pitch contest
 - ✓ Celebrating Innovation (Princeton U.) - poster session, prototypes demo

- **Look for Pitch Contests not only at local but also major international conferences**
 - ✓ Photonics West (San Francisco)
 - ✓ CLEO (San Jose)



Innovation competitions and meetings

– Trade shows

- ✓ Involve students in activities i.e. :
 - work the booth
 - prototypes demonstration
 - networking meeting with industry
- ✓ Make a good trade show selection
 - technical conference well attended by students and faculty
 - strong presence of industry members
- ✓ Allow Startups to exhibit at MIRTHE booth at no cost

– Student Retreat – Industry Focus Forum

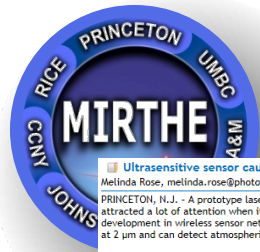
- focused on challenges and opportunities when starting a new company
- panel discussion and presentation



MIRTHE booth
at CLEO exhibition



Student-industry Retreat,
Boston 2009



MIRTHE start-up story

Ultrasensitive sensor causes stir at show
 Melinda Rose, melinda.rose@photonics.com

PRINCETON, N.J. - A prototype laser spectroscopy platform developed by electrical engineers at Princeton University attracted a lot of attention when it was demonstrated during SPIE Photonics West 2010 in January. The sensor, a new development in wireless sensor networks for monitoring trace gases and chemicals, uses an infrared laser operating at 2 μm and can detect atmospheric carbon dioxide with a sensitivity of 113 ppb in an average time of 1 s.



Press release and video featured in Photonics Spectra Magazine

"Several people stopping by the booth have expressed interest in commercializing the technology, which gives us a good impression that our efforts are going in the right direction, because we want to develop technology that is truly field-deployable and useful for many different applications," said Gerard Wysocki, an assistant professor of Electrical Engineering at Princeton University.

"Of course, we consider this a first step."

— January 2010 - Showcase at a major international conference

- ✓ Stephen So (post-doc) presenting his prototype to industry at the MIRTHE booth
 - make connection with media
 - (MIRTHE created a membership level called: Media Affiliate partner based on in-kind donations like articles in trade journals, videos, webinars)



NJ Venture Conference March 2010

— March 2010 – Presence at local venture conference

- ✓ Prototype showcase
- ✓ Oral presentation
- ✓ Pitch judged by VCs



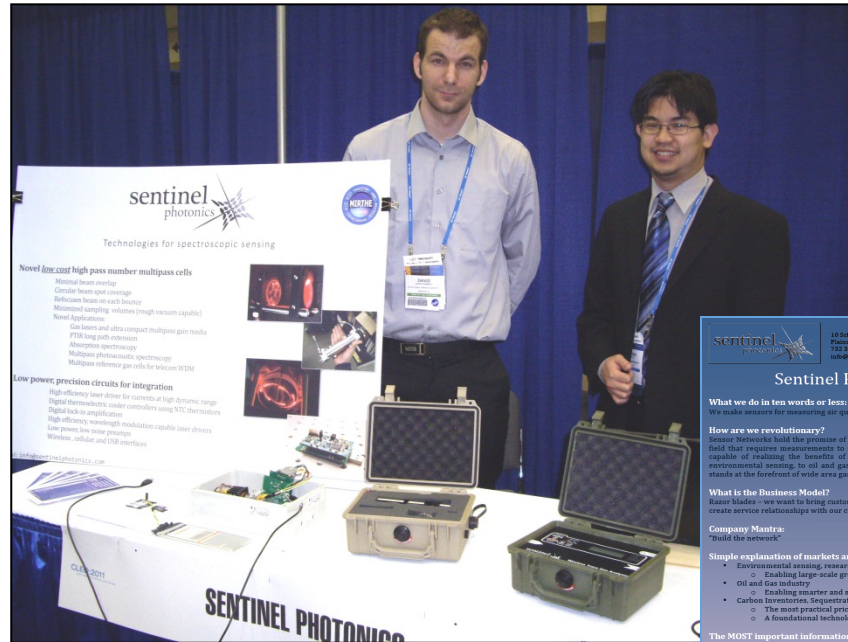
Innovation Forum April 2010

— April 2010 - Elevator Pitch at Innovation Forum, Princeton University (judged by VCs)

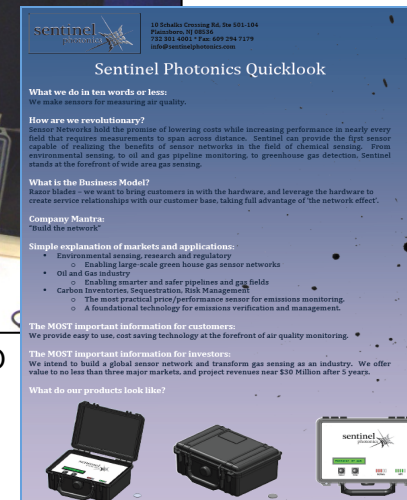
- ✓ second place (April 2010)



Sentinel Photonics lunched in April 2010



David Thomazy, Vice President, and Stephen So, CEO of Sentinel Photonics



Lessons-learned

- ✓ Get students out from their labs
- ✓ Let them “show off” their work
- ✓ Make them interact with industry, VCs, entrepreneurs, and future customers

- ✓ Students should confirm with their faculty advisor before submitting for poster sessions and pitch contests (IP)

Mid-Infrared Technologies for Health and the Environment

