

Quarterly Update

July 2010

This update covers the period of April through June 2010.

The STARS (Innovation Research Team) program is supporting two research teams:

1. The nanophotonics team led by Dr. Michael Hochberg at the University of Washington College of Engineering; and
2. The biofuels research team at the WSU/PNNL Bioproducts, Sciences and Engineering Laboratory (BESL) at WSU Tri-Cities.

In addition, UW and WSU are moving forward recruiting two new STARS researchers/teams to work in the "smart grid" energy area, starting this fall.

Major STARS Researcher Outcomes this Quarter

UW

- The College of Engineering has interviewed three outstanding senior candidates for their "smart grid" faculty recruitment in electrical engineering and will bring one of three back for a second interview before September.

UW expects to announce a successful recruitment of this truly stellar candidate in the smart grid area before the start of Autumn Quarter.

Dr. Michael Hochberg's nanophotonics research team secured \$816,563 in new grant awards this quarter, and Dr. Hochberg's team has received 54 patents (including provisional patents) since joining the UW two years ago.

WSU

- WSU is moving toward hiring three researchers (a full professor, an associate professor, and an assistant research faculty member) to work in the "smart grid" energy space. The assistant research faculty position has been filled but the search continues for the remaining two members of the research team, with a planned start date in fall 2010.
- WSU has successfully started up a new Washington-based company, Food Chain Safety, L.L.C. (FCS). The company will be commercializing Dr. Juming Tang's microwave sterilization technology for use in the food processing industry. A CEO has been identified and the technology has been licensed to the new company.

Major Entrepreneurs-in-Residence (EIR) Outcomes this Quarter

UW: Five industry veterans join Center for Commercialization's EIR Program; two entrepreneurs transition to start-ups

Five high-tech and biotech industry veterans with extensive experience as innovators, developers, entrepreneurs, and executive-level managers have signed on as Entrepreneurs-in-Residence (EIR) at the University of Washington's Center for Commercialization (C4C).

As these five leaders are joining the program, two entrepreneurs have completed their service and are transitioning out to lead promising new start-ups.

The following five industry leaders are the Center's newest EIRs:

- ☆ **Ken Myer**
- ☆ **David Kaplan**
- ☆ **David Croniser**
- ☆ **Thomas Schulte**
- ☆ **Terry Grant**

Quarterly Update

July 2010

Ken Myer gained extensive knowledge of the state's technology sector through his recent tenure as president and CEO of the Washington Technology Industry Association and in the past as board president of the Technology Alliance.

Over a 20-year career he has led companies ranging from startups to those at the Fortune 100 level. Myer co-founded Interval Systems and positioned the company as a leading provider of lean manufacturing software tools for industrial engineers. He also led worldwide marketing, sales, technical, and customer service teams for Active Voice Corporation, which Cisco Systems purchased in 2001. Earlier in his career he held executive positions at IBM Corp.

Myer earned an MA in speech communication and an MBA at the UW. In his new role, Meyer will spend time with faculty working on information technology-related research that might have licensing or new company opportunities.

David Kaplan is a Seattle-based innovator and entrepreneur who will concentrate on smart grid and supporting power industry technologies. In 2006 he founded V2Green to deliver information technology solutions that capture the full economic value of connecting electric vehicles with the power grid. He served as chairman, CEO, and chief technology officer until the company's 2008 acquisition by GridPoint, after which he led the Electric Vehicle Business Management unit until February 2009.

Earlier in his 30-year technology career Kaplan worked at Microsoft and Impinj. He holds degrees in economics and operations research and is the inventor or co-inventor of more than a dozen patented or patent-pending technologies.

David Croniser, an engineer and pioneer in diagnostic imaging, will focus his clinical, technical, and business experience in the healthcare sector. In the 1980s he founded and led one of the earliest ultrasound imaging companies, Quantum Medical Systems, purchased in 1991 by global industry leader Siemens.

Croniser has consulted for numerous start-up companies focused on cardiovascular diagnostics, simulation software, and medical practice software. He returned to Siemens in 2000 to work on strategic product development, then direct ultrasound marketing efforts, and later work in the anesthesia technology sector.

Croniser recently moved back to the Seattle area to drive the market efforts for a company focused on therapeutic vascular technologies.

Thomas Schulte, who has 30 years of experience developing medical devices and medical diagnostic products, will focus on working with UW faculty to position their research findings in the medical and life sciences areas for commercialization.

Dr. Schulte spent 17 years leading research and product development programs at Becton Dickinson & Co., a Fortune 500 healthcare product provider. His technology management experience also includes successful product development in start-up companies like Micronics, Inc. of Redmond, a spin-out company from the UW's Department of Bioengineering, and at Pelikan Technologies in Palo Alto, CA, a company focused on diabetes care and glucose testing.

Over a 21-year career at Weyerhaeuser Company, **Terry Grant** built an impressive record of achievement in new product development, technology commercialization, strategic partnership and business development, and management. Most recently he directed research and development for a \$2-billion Weyerhaeuser business unit and led its bioproducts technology division.

Grant earned a doctorate in chemical engineering and holds six patents, with two others pending. He has substantial experience building and leading multi-disciplinary teams, enhancing intellectual property, and working in the inter-national arena. At the UW, he will focus on cleantech opportunities.

The EIR team receives market research and strategy support from **Stephanie Amoss**, a dedicated Marketing Associate in C4C's New Ventures program.

In the coming quarter, UW will welcome **Henry Berg** as an EIR. Henry is Director of technical due diligence at the A3 Alliance, and formerly worked in product management roles at Microsoft and Vulcan. Henry will be focusing on hardware systems commercialization projects at UW. His first assignment is Nanocel, which is commercializing chip cooling technology out of the Mechanical Engineering Department.

Quarterly Update

July 2010

The following two entrepreneurs are transitioning to new start-ups rooted in university innovations:

Bob Wilcox, an entrepreneurial executive with a history of building and leading world-class technology development and production teams, will be pursuing a new start-up company, Viket, to commercialize an exciting innovation coming out of the UW School of Medicine.

Wilcox also is working with the university to form a Center for Sensorimotor Neural Engineering, including assistance with an Engineering Research Center proposal to NSF. Wilcox will serve as executive director of the Center, which is bringing engineering and neuroscience together to improve neural researchers' ability to gather, explore and

extract information from the brain, and, conversely, use the extraordinary processes of the brain to inform engineering systems and technologies.

Jeffrey Canin, former general partner with venture capital firm eFund and associate with US Venture Partners, will be moving on to Vitrosic, a company he co-founded to commercialize Professor Minoru Taya's electrochromatic window technology, bringing glass partners and funding candidates to the venture. Says Canin, "Serving as an EIR was highly interesting and intellectually satisfying. The university and region will benefit from commercialization. I'm optimistic about future opportunities and hope our new company Vitrosic will contribute to job creation and the local economy."

WSU: Three industry veterans are working under WSU's Entrepreneurs-in-Residence (EIR) program

- ☆ **Jerry Schwartz**
- ☆ **Kevin Petersen**
- ☆ **Bryan Zetlen'**

Jerry Schwartz' Project: *Dr. Diane Cook's Intelligent Environments*

This technology provides a key to the deployment of the "smart environment". To date, Jerry has written and submitted three grant applications for funding to further the technology to the commercial stage. At the same time he has made presentations at nine group events and met with 56 individuals/companies to provide technical information and set the groundwork for starting and funding a company based on the "smart environment" technology.

Kevin Petersen's Project: *Dr. Juming Tang's Microwave Sterilization Technology*

Kevin, with the assistance of the WSU Research Foundation, has formed a new start-up company, Food Chain Safety, L.L.C. (FCS), recruited CEO Rob Wilson, and successfully negotiated/executed a license agreement for the technology with the WSU Research Foundation.

To date, Kevin has made eight presentations at group events and met with 38 individuals/companies to provide information on the technology and develop the appropriate partnerships and alliances that FCS needs to in order to be successful. In addition, the major food manufacturers involved during the past 10+ years of research in the technology have reaffirmed their commitment to continue to fund and collaborate with Dr. Tang's group as they seek additional F.D.A. certifications for the sterilization of complex food products.

These industry leaders have committed to help Dr. Tang and WSU bring this technology to market.

Bryan Zetlen's Project: *Dr. Don Wall's Medical Isotope Production*

This technology is a medical isotope produced at WSU's Nuclear Radiation Center.

Bryan jumped into this project by setting up a conference to introduce and engage key players from Washington State University, the WSU Research Foundation (WSURF) and Pacific Northwest National Labs to discuss the creation of a reactor operator consortium as a pathway to commercialization for this exciting technology.

Quarterly Update

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STARS Researcher Recruitment Update

UW: The College of Engineering has interviewed three outstanding senior candidates for the Close Endowed Chair in Electrical Engineering and will bring one of three back for a second interview before September.

UW expects to announce a successful recruitment of this truly stellar candidate in the smart grid area before the start of Autumn Quarter.

WSU's Senior STARS program researcher search continues. The search committee, including reps. from PNNL and Schweitzer Engineering Lab, identified two candidates; however, both candidates recently declined the position for family reasons.

The search for the senior (Full Professor) position and the mid-level (Associate Professor) position will continue during the 2010-11 academic year. WSU will be working as quickly as possible to fill both positions.

WSU has successfully filled the junior position. The new researcher will join WSU this Fall, bringing six years of experience as an Assistant Research Faculty at Mississippi State University (MSU), a significant record of attracting external funds and an excellent scholarly activity record.

Major Activities by Research Teams

UW: Michael Hochberg's nanophotonics research team

Dr Hochberg's research team secured \$816,563 in new grant awards:

- Co-PI with Dan Ratner, BioEngineering; \$716,563 Bio-sensing grant.
- \$100,000 STTR Grant awarded to Portage Bay Photonics and UW. Portage Bay Photonics is a start-up company that will begin operating in August 2010 with this funding.

The eBeam system has arrived, has been installed, and is undergoing acceptance testing.

Hochberg in the news:

- The New York Times published an article on integrating photonics with electronics and quotes Prof. Hochberg, (3/12/2010).
- SPIE (the Society of Photo-Optical Instrumentation Engineers) published an article discussing recent developments in silicon photonics, and includes a discussion of some of Prof. Hochberg's work, (3/12/2010).

Currently forming the Institute for Photonic Integration (IPI). The IPI will support the creation of an on-shore foundry for photonic-electronic integrated circuit fabrication. This effort is being supported by the Air Force, BAE Systems, and Intel.

Dr. Hochberg's research team has received 54 patents (including provisional patents) since joining UW. This is the first time reporting this number.

Dr. Hochberg presented two invited talks on nanophotonics: CMOS Emerging Technologies; Research and Business Opportunities Ahead Conference in Whistler, BC.

Advanced Photonics & Renewable Energy: Optics and Photonics Congress in Karlsruhe, Germany.

WSU: Birgitte Ahring's biofuels research team

Dr. Ahring's Bioproducts, Sciences and Engineering Laboratory (BSEL) team currently has \$8.3 million in research proposals submitted and pending with various federal agencies and recently received \$225,000 from Easterday Ranches to perform anaerobic digestion/co-digestion research.

BESL is currently filing a patent application that covers the production of energy, and specifically liquid transportation fuels, from biomass using fungal organisms. This research holds the prospect for opening up new avenues for the biochemical production of advanced biofuels in a more cost effective, efficient manner than current production.

BESL currently is filing a patent application related to their work to synthesize high-value prebiotics from biomass. Clinical studies strongly suggest that using prebiotics significantly improves gastrointestinal health and is therefore important in reducing the risk of many chronic diseases.