

NCIIA News

National Collegiate Inventors & Innovators Alliance ■ Spring 2010

Inside:

- New NCIIA venture accelerator program launched in Boston
- NCIIA grant awards: December 2009 cycle
- Spotlight on Whole Tree, Inc.

NCIIA launches VentureLab in Boston

NCIIA has been in the business of accelerating ventures since 2003, with the launch of Invention to Venture (I2V), our one-day introduction to technology entrepreneurship. We've expanded our offerings over the years with Advanced I2V, a four-day workshop that helps young ventures articulate their strategic plans going forward, and Venture Well, which invites a small number of student and faculty researchers to help bridge the gap between academic research and venture formation.

We're excited to announce a fourth offering in our suite of accelerators: VentureLab. VentureLab puts early-stage student ventures into a dynamic, highly experiential learning environment designed to enhance the success of teams' business ideas. Trying to balance all the things that students have to do to get their businesses off the ground can be tough, and early-stage entrepreneurs often know they could be doing things more effectively.

At Venture Lab, ventures have the space to think and explore. They evolve their business strategies, sales channels and marketing approaches as well as better understand the financial mechanics of their ventures, helped by people who have been there and done it.

We recently completed our first VentureLab, held at and sponsored by the Microsoft N.E.R.D. facility in Cambridge, MA. Twenty teams of varying experience were in attendance, and over the first three days of the event, they got a crash course in business development, markets and customers, strategy mapping,

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NCIIA News is the bi-annual newsletter of the National Collegiate Inventors and Innovators Alliance (NCIIA)
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From the Executive Director

Thank you to all who attended the NCIIA 14th annual conference in San Francisco in late March. This year's conference drew an outstanding array of presentations and offered many opportunities for sharing ideas and experiences. It was energizing and productive for everyone involved, with the majority agreeing that it ranks as "better than most," and almost 90% saying they plan to attend the conference again. It's the participation of our attendees that creates the experience: the presentations, discussions, and networking.

Now to next year's conference: **Open 2011**, the NCIIA 15th annual conference, held in Washington, D.C., from March 24-26, 2011. We have sent out the call for proposals; please look for it in your inbox and start your submissions! Your presentations are the foundation of the conference. We look forward to reviewing your proposals after the submission deadline of June 21.

This issue of *NCIIA News* features articles on the results of the first VentureLab venture accelerator program as well as a spotlight on Whole Tree, a Baylor University E-Team having success turning coconuts into car parts.

VentureLab is a five-day workshop that puts early-stage student ventures into a dynamic, highly experiential learning environment designed to enhance the success of teams' business ideas. The inaugural VentureLab, held in Cambridge this April, was an exciting event for all who participated, and a promising launch of this new program. Initial reviews of VentureLab have ranged from "fun and challenging" to "life-changing"; read the article to the left for more information.

Lastly, I want to call your attention to the upcoming deadlines for our Advanced E-Team and Course & Program grants. The next deadline for both is December 3rd, 2010. The deadline for Sustainable Vision grant proposals is October 15th, 2010. Don't miss out on the chance to strengthen invention, innovation, and entrepreneurship education at your institution through curricular development and support for the work of E-Teams.

Sincerely,



Phil Weilerstein,
Executive Director

Whole Tree taking a wholly different approach

Baylor University E-Team building a business from the bottom up

A standard approach to dealing with problems in the developing world is to develop a specific solution to a specific problem: if people lack access to potable water, you develop a water filter for them to buy and use. Need lighting? Manufacture and sell solar lamps. While there's nothing wrong with this approach, Whole Tree, Inc., a former Baylor University E-Team and the first recipient of Venture Well investment funding (see sidebar on page 4), is using a different tactic: alleviating poverty by providing access to huge markets in the US and abroad.

The challenge, of course, is identifying products that a) US markets want in large quantities, and b) can be supplied by people in the developing world.

That was precisely the challenge facing Baylor engineering professor Walter Bradley a few years ago, when he and post-doctoral student John Pumwa sat down and tried to figure out how to help the rural poor in Pumwa's home country of Papua New Guinea and countries like it.

Their solution? Find an abundant, renewable resource grown exclusively in countries where the vast majority of people are poor and try to significantly increase the market value of that abundant resource.

The resource they hit on? Coconuts.

It's not as nutty as it sounds. The coconut palm is ubiquitous throughout the tropical belt that runs around Earth's equator, and while many uses have been found for the nut the tree produces, as well as the husks that encase the nut's hard shell, they are currently of such meager commercial value that a typical coconut farmer in the Philippines, the world leader in coconut production, earns only about a dime for every coconut.¹

Bradley and his team set out to increase that number. After a couple of months of research, and backed by a 2004 NCIIA E-Team grant, Bradley's team came up with a suite of coconut-based products designed to up their value: bio-diesel (from coconut oil), pig and chicken feed (from the white "meat"), particle board (from the shells), and anti-erosion matting (from the fuzzy fibers on the shell).

None of the products were quite up to snuff, however. The average coconut farmer makes \$500 a year, and Bradley's team wanted to find uses for the coconut that would bring farmers triple what they made, but none of the envisioned products could accomplish that; for instance, the sale price of coconut oil for cooking was a little more than the price they could sell bio-diesel, so they were actually going backwards.

But as is often the case in entrepreneurship, failure can breed success. Bradley's team soon switched tracks to focus specifically on the coconut shell and outer fibers, and they

haven't looked back since. A fortuitous meeting between Bradley, Jim Kephart (Director of Program Development at Baylor Advanced Research Institute) and a local Waco company that supplies unwoven fiber mats to four major automotive companies resulted in the big innovation: using coconut husks for automotive interiors.

Yes, the coconut car. Bradley and his team partnered with the Waco company to develop technology that converts coconut husk fibers into a safe and suitable replacement for the synthetic polyester fibers used to make trunk liners, floorboards, and interior door covers on cars.

This is potentially a huge market, and investors and grant-makers are paying attention. After incorporating as Whole Tree, Inc., and taking on Baylor graduate students Elisa Guzman-Teipel and Stanton Greer as key leaders, the team won SBIR Phase I funding (Phase II is in the works), and received funding from private investors, NCIIA's Venture Well included.

The market is proving receptive as well; Whole Tree is now working with several major car companies and tier 1 parts-makers to incorporate coconut fiber composites into car parts. "The automotive industry is one of the hardest industries to penetrate," said Guzman-Teipel, "but we're almost there."

They're also working out their supply chain, with Stanton Greer taking the lead in the SBIR Phase II proposal to develop Whole Tree's supply chain and Guzman-Teipel working in the field to "make sure that our partners are up to par, make sure everyone's on the same page, and make sure we get high quality materials no matter what country they're coming from."

With as much as 100 million pounds of coconuts potentially going into cars per year and 95% of the world's coconut supply grown by poor farmers, Whole Tree is nearing its goal of helping the poor by providing them with access to major global markets.

"From the beginning, we've wanted to affect the people at the bottom of the pyramid first," said Guzman-Teipel. "The way that we've gone about it isn't simply to say, 'Ok, here's a problem and we're going to fix it.' We believe both the US and the developing world can benefit if we design the right products."

Whole Tree is also an ideal example of how a team can achieve success using NCIIA's programs to their fullest. Whole Tree has participated in nearly every NCIIA offering, earning two E-Team grants, attending March Madness for the Mind (twice), attending an Advanced Invention to Venture workshop, and ending at the pinnacle: significant investment funding through Venture Well. "NCIIA hasn't just influenced this project, it's enabled it," said Bradley.

1. From "Is a Coconut Car Coming Your Way?" by Lee Dye, abcnews.com

Funded NCIIA grants: December 2009

Advanced E-Team grants

Lochlorine Chlorine Producer and Doser: Saving Lives Through Safe Water

Alice Agogino, University of California, Berkeley, \$20,000

Fuel from the Fields

Amy Smith, Massachusetts Institute of Technology
\$17,793

InSpiro

Richard Schulick, Johns Hopkins University, \$18,000

Cortical Concepts

A. Jay Khanna, Johns Hopkins University, \$20,000

Medici Medical Technology

Jon Fjeld, Duke University, \$11,850

BioX-Design9

Paul Yock, Stanford University, \$17,495

DiverRx -- Preventing Recurrent Diverticulitis

Pankaj Pasricha, Stanford University, \$17,355

UrbanE

Wesley Jarrell, University of Illinois at Urbana-Champaign, \$18,500

Developing and Testing a Novel Therapeutic Game for Children with Autism Spectrum Disorder

Andrew Laine, Columbia University, \$20,000

Operation Simple

Kenneth Kahn, Virginia Commonwealth University
\$16,700

Orpheus Medical

Thomas Krummel, Stanford University, \$17,982

Course & Program grants

Developing a Cross Discipline E-Team Service Learning Course

Matthew Wagner, University of Wisconsin-Parkside
\$9,000

Internationalizing Entrepreneurship Education Program

Sadan Kulturel-Konak, Penn State Berks, \$31,700

Technology Entrepreneurship Initiative

Nola Miyasaki, Oklahoma State University, \$28,500

In Pursuit of Innovation

Adam Galambos, Lawrence University, \$23,000

Bio-architectural Design E-Teams for Biomedical Challenges

Bryan Pfister, New Jersey Institute of Technology
\$30,000

Development of an Undergraduate Minor Specialization in Sustainable Global Health Design

Kathleen Sienko, University of Michigan, Ann Arbor
\$41,000

The University of Minnesota Acara Summer Institute for High Impact Businesses

Julian Marshall, University of Minnesota, \$20,500

The Global Innovation for Village Entrepreneurship (GIVE) Capstone

Mark Henderson, Arizona State University at the Polytechnic Campus, \$30,000

Developing a Professional Certificate Program in Innovation and Sustainability at the University of Wisconsin-Milwaukee

Adream Blair, University of Wisconsin-Milwaukee, \$8,000

Integrating Innovation and Invention into Computer Science Project Courses

Joel Wein, Polytechnic University of NYU, \$11,000

Funding a "Dormcubator" at the University of Illinois at Urbana-Champaign

Rhiannon Clifton, University of Illinois at Urbana-Champaign, \$8,000

Social Entrepreneurship Course Development

Khanjan Mehta, Pennsylvania State University, \$10,000

Sustainable Vision grants

Socialite

Toby Cumberbatch, Cooper Union, \$43,200

The Human-powered Nebulizer in Central America

Lars Olson, Marquette University, \$41,974

Pico-hydro Electric Power for Isolated Villages

Elsa Garmire, Dartmouth College, \$36,900

Improved Rural Health Care through Low-cost Telecommunication in Waslala, Nicaragua

Pritpal Singh, Villanova University, \$44,625

Sustainable Venture Accelerator

Carl Hammerdorfer, Colorado State University, \$48,825

Cycle Ventures: The Rickshaw Bank Partnership

Amy Smith, Massachusetts Institute of Technology
\$46,200

Enabling Effective Management of Neonatal Jaundice in Rural India

Bernard Roth, Stanford University, \$46,500

Flexible Ad hoc Networks for Scarce Environments

Santosh Vempala, Georgia Institute of Technology
\$44,053

Affordable Universal Socket for Amputees in Third World Countries

Ha Vo, Mercer University, \$37,275

Building on Tradition: Indigenous Green Housing

John Duffy, University of Massachusetts Lowell, \$44,625

how to leverage their network, initial market research, and sales and pitching. The teams were then handed \$500 each and told to run with it, giving them two weeks to move their ventures forward as far as they can.

The teams re-united two weeks later to present their newfound company missions, report what they did with the money, and most importantly, explain what they need to continue developing their visions and take their companies to the next level.

We spoke with James Barlow, the new outreach director for NCIIA and initiator of the VentureLab program, about VentureLab's genesis and where he sees it heading down the road.

Where did the idea for VentureLab come from?

The idea came from my work with the Scottish Institute for Enterprise in the UK. We found that if you create the right environment for accelerated exploration, you can actually move a very early stage business forward very quickly. Once teams finished the program, they saw direct, tangible impacts straight away.

What do students learn in VentureLab?

The things we learn to do, we learn by doing. VentureLab takes all the research that has gone into business creation and lays down something directly applicable. The program comes from a standpoint that says, "We're gonna give you a bunch of information, then we're gonna give you a framework to help you understand it, and then you'll reapply that knowledge in a way that makes sense." So when they leave VentureLab at the end of the week, they leave with a series of tools that they know how to use and have the confidence to put them into practice in day-to-day business. It's an applied approach to learning about commercialization.

How does value chain mapping fit into VentureLab?

The core of the program focuses around strategy and value chain mapping. We get the participants to visually map out their businesses so that the big picture starts to make sense to them. It enables them to understand that making certain changes can have far-reaching implications—for costs, sales, etc. We help them reach a level of clarity and insight so that they can make well-informed decisions.

The analogy I give is that the entrepreneur coming up with a strategy for his or her idea is like trying to find the right heart for a heart transplant. It's technically difficult, there are a lot of steps, but the surgeon makes his money by stitching the right heart into the patient and making sure everything connects in exactly the right way. In the same way, an entrepreneur's success directly relates to his or her ability to stitch the idea into the marketplace. If he or she doesn't understand how to connect together each individual touch point that's relevant to the marketplace or the supply chain, then the idea might be rejected by the marketplace or might fail altogether. VentureLab helps people make those connections.

Initial reviews of VentureLab have ranged from "fun and challenging" to "life-changing." To learn more about VentureLab, visit <http://nciia.org/ventures>. ○

Venture Well announces first investment

Venture Well was founded in 2008 as an initiative of the NCIIA to support select ventures focused on improving human health and environmental sustainability. We're happy to announce that green materials company Whole Tree, Inc., will be first recipient of Venture Well investment money.

Whole Tree's mission is to transform lives through engineering solutions created from natural resources. The initial family of products makes use of coconut husks to produce patent-pending composite materials, initially for the automotive industry. The company is developing additional materials that similarly turn low-value agricultural waste products into higher-value—and higher-quality—replacements for high volume petrochemical-derived products.

"We are pleased to be the first recipient of Venture Well funding and to continue our relationship with Venture Well and the NCIIA," said Blake Mosher, Executive Vice President of Whole Tree. "This investment round will bolster our efforts to continue to produce innovative and eco-friendly technologies that exceed the standards of current petrochemical materials."

Whole Tree has a longstanding relationship with the NCIIA. The company leveraged an E-Team grant to Baylor University to develop its technology and form Whole Tree. The company has benefited from AI2V venture accelerator training provided by the NCIIA and was one of nine teams selected to take part in the inaugural Venture Well Forum, an annual, intensive, day-long meeting during which each participating team has the opportunity to connect with investors and advisors.

Whole Tree perfectly illustrates how an early stage company with active university student engagement can blossom into a venture with large-scale commercial potential. We wish them the best!

Venture Well is currently focused on capital-efficient opportunities in green materials and on innovations in energy efficiency, from solar to software. For more information, please visit www.venturewell.org.

Olympus Innovation Award winners announced



(l to r) Paul Hudnut, 2010 Olympus Innovation Award Winner; Jeff Blander, 2010 Olympus Emerging Educational Innovator Award Winner; and Jerry Engel, 2010 Olympus Lifetime of Educational Innovation Award Winner

The Olympus Innovation Awards Program has recognized faculty excellence and innovation in higher education since 2005. The 2010 winners were announced at the NCIIA Annual Conference in San Francisco this March. The winners are:

Paul Hudnut, Colorado State University (\$10,000, Olympus Innovation Award)

Jerry Engel, University of California at Berkeley (\$2,500, Olympus Lifetime of Educational Innovation Award)

Jeff Blander, Harvard Medical School/MIT (\$1,000, Olympus Emerging Educational Innovator Award)

Congratulations to the winners! To read more, visit nciia.org/competitions/olympus.

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WASHINGTON, DC

March 24-26, 2011

Westin Hotel, Old Town Alexandria, VA

Abstract submission deadline: 6/21/2010

Paper submission deadline: 9/27/2010

[Learn more at nciia.org](http://nciia.org)



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Next NCIIA grant application deadlines

Course & Program and Advanced E-Team grants:

December 3, 2010

Sustainable Vision grants:

October 15, 2010

Advanced E-Team grants (\$1,000 - \$20,000) support commercial outcomes by moving innovative products or technologies from idea to prototype. E-Team grant proposals must demonstrate an idea's technical feasibility, potential for commercialization, and social value.

Course & Program grants (\$2,000 - \$50,000) are awarded to faculty and staff at colleges and universities to help improve existing curricular programs or build new programs in invention, innovation, and entrepreneurship.

To obtain the full RFP and apply online, visit www.nciia.org or e-mail info@nciia.org.

Sustainable Vision grants (\$10,000 - \$50,000) support transformative educational programs where breakthrough technologies are created and commercialized for the benefit of people living in poverty in the US and abroad. Past grants have addressed basic human needs such as health, food, security, clean water and affordable energy for people living in poverty.

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