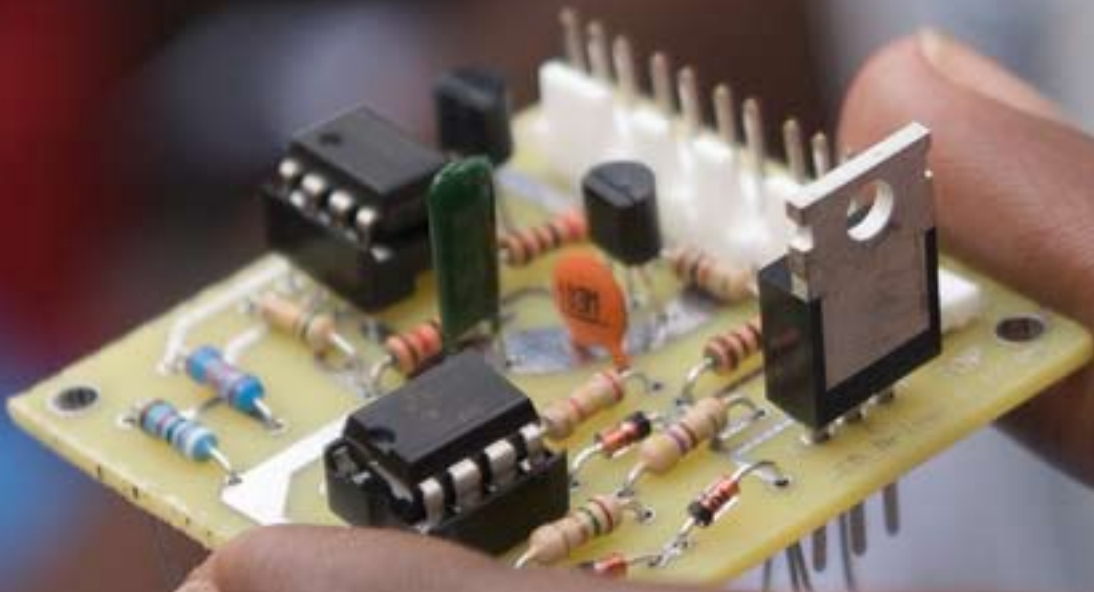


NCIIA Annual REPORT FY 2009



From the Executive Director



I am pleased to present the National Collegiate Inventors and Innovators Alliance (NCIIA) report for 2008/09.

This was a successful and exciting year for the NCIIA. In 2008/09, the NCIIA:

- Awarded a total of 59 grants to faculty members through the Course and Program, Advanced E-Team and Sustainable Vision grants programs (includes May, October and December 2008 cycles).
- Recognized faculty accomplishments via the Olympus Innovation Awards.
- Engaged with more than 2,200 participants around the country through the Invention to Venture workshop series.
- Rolled out the first Research to Innovation workshops, targeting researchers and helping them view their science through the 'lens of the market.'
- Rolled out the pilot phase of its new investment and advice program, Venture Well. Nine student start-ups were selected to be in the first cohort group, and were invited to the inaugural Venture Well Forum for further training and networking.
- Successfully staged key outreach events: the 13th Annual Conference and March Madness of the Mind E-Team showcase, Venture Well Forum, and the 2009 BMEidea Competition.
- Secured \$1.4 million in grants from the National Science Foundation to enable expansion of research in the field of technology entrepreneurship education and evaluation and entrepreneur support activities.

I thank our board members, who have guided the organization with expertise. I would like to commend the staff of NCIIA for their professionalism and energy during the year. I am pleased to share with you this report of NCIIA's second year of independent operations, and look forward an equally exciting future!

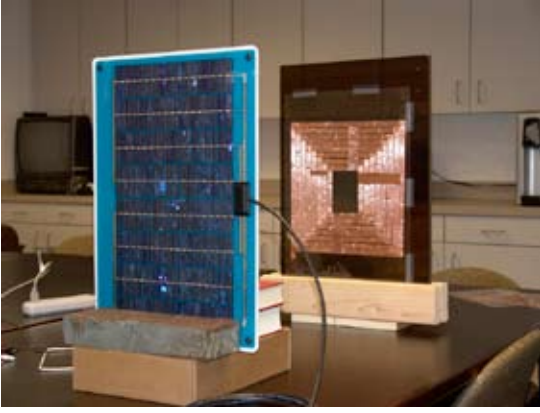
A handwritten signature in black ink, appearing to read "Phil Weilerstein". The signature is stylized and cursive.

Phil Weilerstein
Executive Director

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About the NCIIA



The National Collegiate Inventors and Innovators Alliance was established in 1995 with support from The Lemelson Foundation, the legacy of inventor Jerome Lemelson (1923-1997) and his family. Lemelson believed that teaching invention, innovation and entrepreneurship to young people is the most effective way to bring forth the next generation of innovators—generating new products, creating employment opportunities, strengthening the national economy, and developing solutions to pressing global problems.

The NCIIA, founded to support and encourage invention, innovation and entrepreneurship education at institutions of higher learning throughout the United States, offers grants for curricular development, supports E-Teams (“E” is for excellence and entrepreneurship), multi-disciplinary teams of students, faculty and industry mentors.

The NCIIA works with colleges and universities to create commercially viable and socially beneficial businesses and employment opportunities, and to bring ideas to practice through entrepreneurial efforts in the United States and around the world.

FY09 By the Numbers

In 2008-09:

- The NCIIA awarded
 - ◇ 27 Course and Programs grants (499,794)
 - ◇ 21 Advanced E-Team grants (\$388,247)
 - ◇ 11 Sustainable Vision grants awarded (\$465,432)
 - ◇ \$1.35 million total in grants
- The NCIIA gathered together more than 2,200 participants around the country through the Invention to Venture (I2V) workshop series.
- At least 13 new companies emerged from former NCIIA E-Team grants
- At least 12 E-Teams submitted patent applications (none were issued in the period)
- NCIIA membership grew to approximately 180 colleges and universities

Funding experiential learning opportunities

NCIIA awarded \$1.35 million in 59 Sustainable Vision, Course and Program and Advanced E-Team grants to universities and colleges in FY09.

Sustainable Vision grants

Sustainable Vision grants support innovative educational programs at US colleges and universities. These programs move ideas to commercialization while addressing basic human needs for people living in poverty in the US or abroad.

During 2008/09, the NCIIA awarded eleven Sustainable Vision grants to faculty (total \$465,432). Since 2006, Sustainable Vision projects have engaged 24 US universities working in 23 countries in Asia, Africa, and Latin America to develop, commercialize, and disseminate technologies to benefit people living in poverty. Areas of focus include water purification, alternative energy, affordable healthcare and wireless technologies that increase income and/or produce social benefits.

Grantee highlights from FY09

Good Guide



This 2006 Sustainable Vision grantee from UC-Berkeley launched a website, www.goodguide.com, which was featured in March 2009 in Time magazine as one of “10 ideas changing the world right now.” GoodGuide rates products based on how “good” they are in terms of social and environmental practices. What chemicals are in your baby shampoo? Was sweatshop labor used to make your t-shirt? What’s the total environmental impact of this gallon of milk? Using an iPhone app, shoppers can enter a product’s name on their mobile device and the site replies with detailed health, environmental, and social ratings.

In fall 2007 the project spun off the UC Berkeley campus, licensed some of their IP, created a For Benefit corporate company and raised \$3.6 million. GoodGuide has several million users so far.



“The NCIIA funding was HUGE in terms of securing other funding. We were able to build a running prototype using those funds, and have covered some good ground in terms of business development—all possible using NCIIA funds. Those funds very much enabled us to hit the ground running, and for that, we’ll always be grateful.”

—Mac McGoldrick, Colorado State University:
Retrofits for Diesel Trucks
Sustainable Vision Grant



Village Energy

Since 2007, a team from Baylor University has worked in remote villages in Honduras, helping locals build mini hydropower stations. The team’s company, Village Energy, launched an electricity generation business in a village called Danto Uno, and is establishing a second business in a nearby village. Work is also underway to help local people use their new source of energy to spur entrepreneurial activities. A Baylor faculty member taught entrepreneurship to village people on a recent visit, and already villagers are creating their own businesses.

New grantees in FY09

- Engineering a Sustainable Business Model Framework for Scalable Mobile Entrepreneurship in the Developing World *Dartmouth College*, \$39,433
- Affordable Solar Thermal Microgenerator Technology for Rural Cogeneration in Southern Africa *Mass Institute of Technology*, \$47,031
- High Efficiency Stove Microenterprise *University of Colorado at Boulder*, \$31,185
- Mashavu: Networked Health Solutions for the Developing World *Pennsylvania State University*, \$46,850
- Clean Water and Energy Technology Enterprises for Ifugao, Philippines *Villanova University*, \$49,000
- GlobalResolve: Development of a Sustainable Gelfuel Business in Rural Ghana *Arizona State University*, \$45,150
- Building a Global Sustainable Supply Chain for Appropriate Technology *Colorado State University*, \$45,800
- Building A Global Network to Support Sustainable Information and Communication Technologies Entrepreneurship in Senegal *Pace University*, \$32,550

- Low-Cost Solar/Wind Drip Irrigation for Small Farmers in Developing Countries *University of Massachusetts, Lowell*, \$46,839
- Sustainable Community-Based Arsenic Removal Systems in Remote Villages of Cambodia in South East Asia *Lehigh University*, \$47,250
- Advanced Field and Laboratory Testing for a Sustainable Solar Sanitation System *Georgia Institute of Technology*, \$34,333



Socially and Environmentally Focused Grants as Percentage of NCIIA Grants Awarded

E-Team	100%
Course & Program	79%
Sustainable Vision	100%



Internationally Focused Grants as Percentage of NCIIA Grants Awarded

E-Team	30%
Course & Program	35%
Sustainable Vision	100%



“We initiated, with NCIIA help, the new certificate program *Global and Ecological Health Engineering: WHIA* was the demonstration project. We have other projects going and have recast the program as a *BME-Environmental Engineering* collaboration since so many health problems go beyond medical devices. We’ll be at 10 students next year and full strength at 20 the following year...a result of NCIIA support.

The *Global Healthcare Technologies Program* in the McCormick School of Engineering at Northwestern University is an intensive, quarter-long course where students work with front-line healthcare workers to design medical devices specifically for the developing world. A Course and Program grant funded the development of a new certificate program, *Global and Ecological Health Engineering*, and also funded the ongoing development of the *World Health Imaging Alliance* project.”

—Matt Glucksberg of Northwestern University: Global Healthcare Technologies Program

Course and Program grants

Course and Program grants are awarded to faculty at colleges and universities to help improve existing curricular programs or build new programs in invention, innovation, and entrepreneurship. Course and Program grants support creative pedagogy that generates E-Teams, bringing real life applications into the classroom setting and beyond.

During 2008/09, the NCIIA awarded 27 Course and Program grants (totaling \$499,794) to faculty. The grants included single- and multi-year grants to create and improve courses and programs in entrepreneurship and innovation.

Previous grantees have reported institutionalization of entrepreneurship education opportunities, including permanent course offerings, new minors, new certificate programs, and the expansion of existing opportunities to engage new groups of students and faculty.

Grantee highlights from FY09

Several E-Teams that formed from NCIIA-funded Course and Program grants have gone on to create new ventures. For example, *Respira Design* (www.respiradesign.com), which emerged from Stanford’s *Global Health By Design* program, has developed a low-cost, patent-pending device made of an inexpensive paper-like sheet that can easily assembled into a metered-dose inhaler to treat asthma.

Another Course and Program-supported course at the University of Southern Mississippi spawned five E-Team companies that each incorporated and raised external funds. One, *Ablitech, Inc.*, creates platform technologies to heal and protect the human body, and has raised \$400,000 in funding.

New grantees in FY09

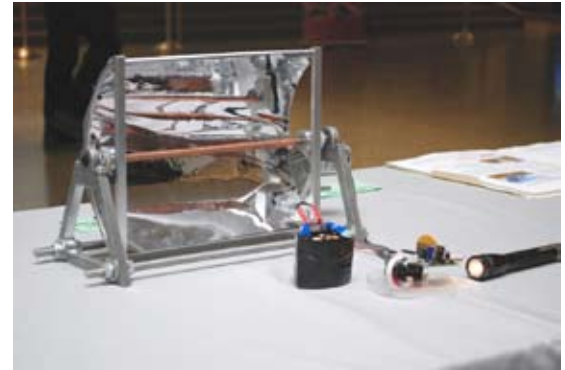
December 2008

- **Technological and Agricultural Entrepreneurship for a Globally Sustainable Future** *Colorado State University*, \$31,500
- **Biomedical Engineering E-Teams Without Borders** *University of Alabama at Birmingham*, \$31,500
- **Bringing Healthcare Home** *University of California-Berkeley*, \$26,500
- **Enhancing Entrepreneurship Engineering Education Program Activities at Mercer University** *Mercer University*, \$6,500
- **SVSU Social Entrepreneurship** *Saginaw Valley State University*, \$6,500
- **UR-PUCP: Collaborations for Healthcare in Developing Countries** *University of Rochester*, \$25,200
- **Development of a Personal Water Purification Solution in the Philippines** *Manhattan College*, \$8,000

- **Moving Clean Energy Innovations to the Market and Creating Entrepreneurial Learning Opportunities through Cross-disciplinary Student Teams** *Montana State University*, \$24,500
- **Developing Design Thinking in Multi-disciplinary Teams** *University of Illinois at Urbana-Champaign*, \$34,500
- **Lion Launch Pad - Center for Penn State Student Entrepreneurship** *Pennsylvania State University*, \$28,000
- **Village Empowerment** *University of Massachusetts-Lowell*, \$31,000

May 2009

- **Enhancing Entrepreneurship Education and Training via the Rutgers Entrepreneurship Lab** *Rutgers University*, \$10,000
- **UW Environmental Innovation Challenge** *University of Washington*, \$15,000
- **Social Entrepreneurship Program for Technology Innovation** *University of Puerto Rico, Humacao*, \$7,500
- **Information, Innovation, and International Development (I3D)** *University of California, Berkeley*, \$36,500
- **Entrepreneurial Ventures for Journalists** *Baruch College, CUNY*, \$21,200
- **Technology Commercialization in Developing Countries** *Rice University*, \$32,000
- **Creating Social Value and Pattern-breaking Change through Design** *Art Center College of Design*, \$22,500
- **Renewable Energy Entrepreneurship Partnerships (REEP)** *Savannah State University* \$24,000
- **Facilitating Entrepreneurship in Lighting** *Rensselaer Polytechnic Institute*, \$29,394
- **The KINDLE Student Mentoring Program** *Boston University*, \$33,000
- **Building a Design and Innovation Professional Masters Degree Program** *University of Cincinnati*, \$7,500
- **E-ship Engineering Entrepreneurship Innovation Development Directive** *University of Colorado at Boulder*, \$7,500



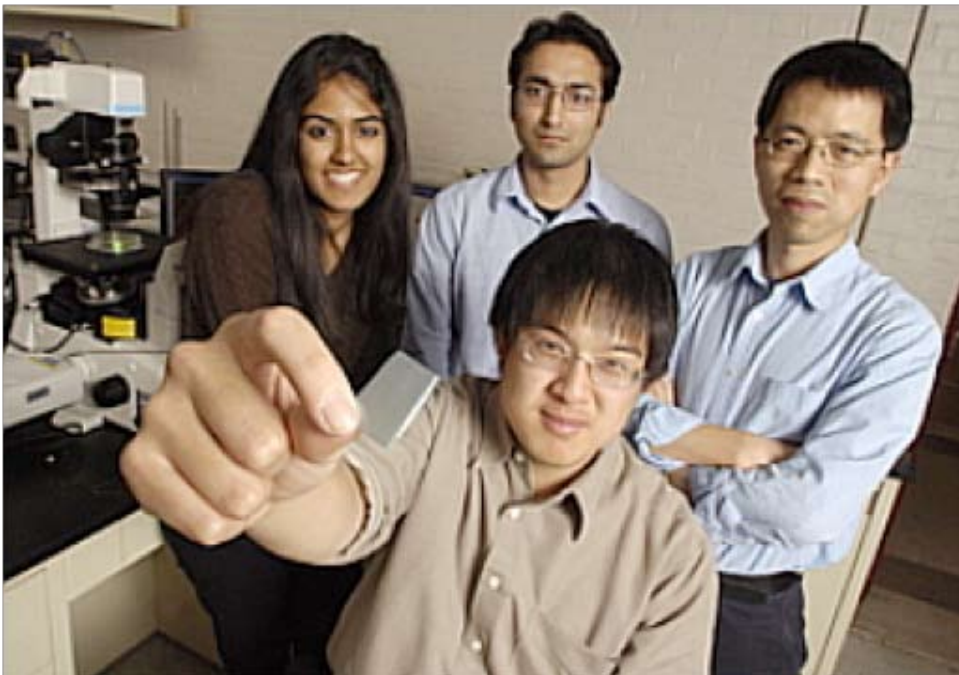
Advanced E-Team grants



An E-Team is a group of students, faculty and advisors who go into business and develop products while at school. The “E” stands for excellence and entrepreneurship. These grants support E-Teams by providing funding to move ideas or designs to the prototype stage. The grants also help E-Teams secure intellectual property.

In 2008/09 NCIIA awarded 24 Advanced E-Team grants (totaling \$388,247) involving approximately 100 students.

Grantee highlights from FY09



A Johns Hopkins team that successfully manufactured a rotavirus vaccination delivered via an oral thin film has executed an exclusive license agreement and secured \$1.9 million from the Gates Foundation (to partner Aridis Pharmaceuticals).

InSite Medical Technologies (insitemedtech.com), a company launched in 2007 that developed a safer, more controlled way to access the epidural space when delivering surgical anesthesia, has secured \$1 million over the past three years from investors and successful SBIR grants from NSF. They have a patent pending and have negotiated an exclusive license from Stanford to continue product development activities.

Highlights in FY09 also included thirteen new companies launched:

Company	University grantee
Whole Tree, Inc.	Baylor University
Therapeutic Systems, LLC	University of Massachusetts, Amherst
COR Innovations	Stanford University
Micro Tissues, Inc.	Brown University
Sential	Babson College
GoodGuide, Inc.	University of California, Berkeley

MineWerks	Rensselaer Polytechnic Institute
Lono LLC	University of Notre Dame
PowerMundo, Inc.	Colorado State University
Logimed, Inc.	Stanford University
Aid Networks	University of Maryland
SurgSolutions, LLC	Stanford University
Sproxil	Dartmouth College

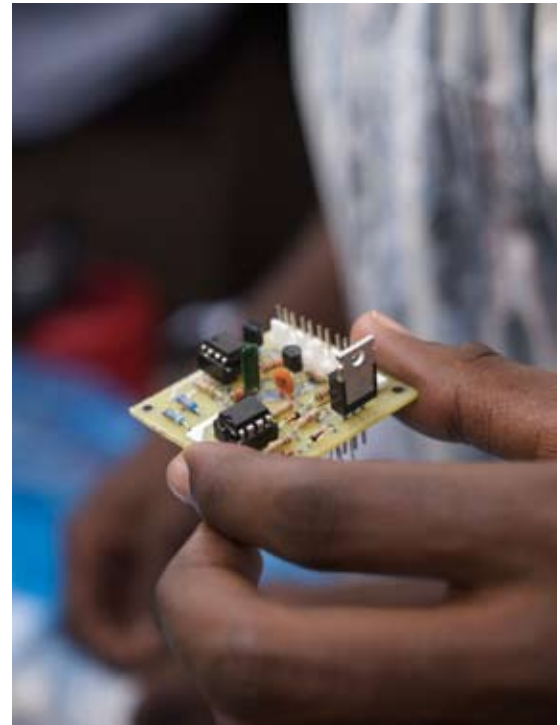
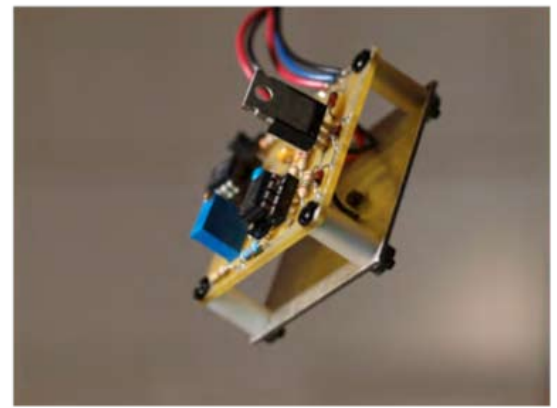
New grantees in FY09

December 2008

- **Revolutionary Closed System Drug Transfer Device** *University of Iowa, \$18,000*
- **KMC ApneAlert** *Northwestern University, \$20,000*
- **Development of a Total Cancer Marker through Single Molecule Assessment of DNA Integrity (smDIA)** *Johns Hopkins University, \$20,000*
- **PlastEco** *Duquesne University, \$15,025*
- **SMART Kit** *Lehigh University, \$19,600*
- **Development of a Novel, Low-Cost Point of Care HIV Viral Load Diagnostic for Resource-Limited Communities** *Arizona State University at the Tempe Campus, \$20,000*
- **Restoration of Fecal Continence in Women** *Stanford University, \$19,166*
- **N-SORB: Providing Safer Environment** *Brown University, \$20,000*
- **ecoMOD Home Energy and Environmental Monitoring System** *University of Virginia, \$15,000*
- **NexGEN SolarPads** *Rensselaer Polytechnic Institute, \$19,000*

May 2009

- **Solar Ease** *University of Pittsburgh, \$20,000*
- **Polytech Waterbag: Water Treatment for Disaster Relief** *California Polytechnic State University, San Luis Obispo, \$20,000*
- **Dairy Pasteurization for Rural Peru** *Rensselaer Polytechnic Institute, \$16,000*
- **GlobalResolve: Development of the Twig Light** *Arizona State University at the Polytechnic Campus, \$16,000*
- **Sheba Water Filter: A Product of AYZH** *Colorado State University, \$16,700*
- **Automating Long-range Vibrometry through Vision and Web Technologies** *CUNY City College, \$18,144*
- **Reverse Engineering Bicycles to Develop New Businesses, Prod-**





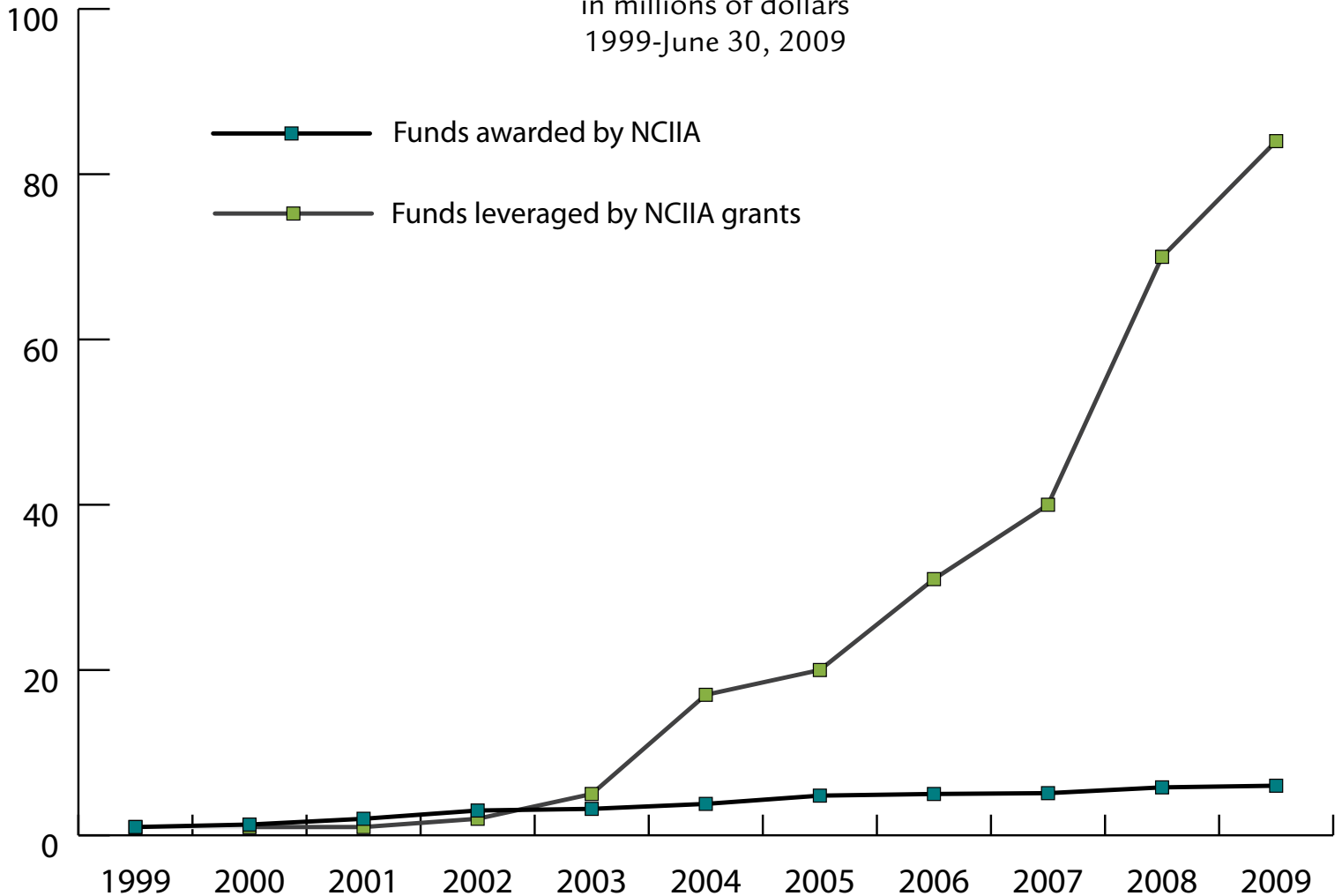
ucts, and Increased Income for the Metalworking and Agriculture Industries in Lebialem (Cameroon) *San Jose State University, \$20,000*

- **A Medical Device to Treat Gallstone Disease** *Stanford University, \$18,968*
- **Magnetic Ventures** *University of Michigan, \$16,700*
- **Development of a Dynamic EUS Needle: Improving the Efficacy of Endoscopic Needle and Noninvasive Surgical Procedures** *University of Virginia, \$19,990*
- **Optimization of a Novel Device to Measure the Intrinsic Muscles of the Hand** *Rice University, \$13,200*
- **OsmoPure** *Rensselaer Polytech, \$10,500*

NCIIA Grantees receiving external funding leveraged by their grants, reporting in FY2009:

- 27% (6 of 22) Course & Program grantees
- 55% (15 of 27) E-Team grantees
- 67% (4 of 6) Sustainable Vision grantees

E-Team Leverage
NCIIA Funding and External Funding Raised by Grantees
 in millions of dollars
 1999-June 30, 2009



Conference Sponsorship grants

Each year NCIIA sponsors a number of events and competitions. In FY09, the NCIIA sponsored:

- **Global Social Entrepreneurship Competition (GSEC)**, February 2009 at the University of Washington
- **Duke/Olin/USC Grand Challenges Summit**, March 2009
- **United States Association for Small Business and Entrepreneurship (USASBE)**, a three-year sponsorship
- **Portland International 2009 Conference on Management of Engineering and Technology (PICMET)**

Resource, Experimental and Dissemination grants

Experimental grants fund new ideas in need of development. Resource grants fund projects that will benefit NCIIA members and others. Dissemination grants fund faculty and staff to write and speak about their experiences in entrepreneurship education. In FY 09, NCIIA supported:

- **The International Journal for Service Learning in Engineering** in developing an electronic journal for the publication of curricular and project papers in the area of entrepreneurial projects with high social impact.
- **Carthage College** in expanding the usage of a donated intellectual property database for the stimulation of technically oriented E-Teams at non-research institutions.



Training and venture development opportunities for entrepreneurs

Invention to Venture (I2V) and Advanced I2V workshops



US colleges and universities have an untapped entrepreneurial resource in their students and faculty. Since 2003, one-day Invention to Venture (I2V) and four-day Advanced I2V workshops, offered in conjunction with host institutions around the country, have tapped that potential by introducing participants to the world of technology entrepreneurship. The workshops, which are open to students, faculty, and the business/innovation community, serve both as a hands-on educational experience and as a networking opportunity.



This year, 35 workshops reaching over 2,200 attendees were held in locations across the US. Events included one-day introductory Invention to Venture workshops and intensive four-day Advanced Invention to Venture workshops, as well as several new offerings piloted with the National Science Foundation:

- **21 Invention to Venture** workshops
- **9 Advanced Invention to Venture** workshops
- **5 Special Workshops**—two for the NSF's Centers for Chemical Innovation Program, one for NSF's IGERT program, one for EurekaFest engaging high school students, and one BioScience AI2V workshop



Bioscience AI2V

NCIIA held its first **BioScience Advanced Invention to Venture** (BAI2V) workshop at Creighton University in Minneapolis, MN in May, 2009, with eleven teams participating. This workshop is designed for teams interested in taking their biomedical innovation to market. University of Cincinnati is scheduled to host the next BAI2V workshop in fall 2009.

Research to Innovation workshops

With funding from the National Science Foundation, NCIIA delivered two **Research to Innovation** training workshops to graduate and post-doc students from NSF's Chemical Centers for Innovation (CCI) Program. The participants learned to view their science through a technology transfer lens and got an overview of the resources available to support the venture creation process at colleges and universities.

Venture Well

In the past year, we undertook the development and rollout of the pilot phase of our commercialization initiative. Initially named National Collegiate Investors but renamed **Venture Well** prior to its launch in September 2008, the initiative moved forward with a program of support for high potential ventures from the NCIIA program pipeline and an investment target of two or three investments by end of calendar

"This great training program taught us how to view our science through a "market lens." For the first time, I started to look at my research from a different point of view and to relate it with concepts that I had never thought about before, such as "market segment," "value chain," "technology transfer"...It was kind of exciting. This workshop offered us a unique opportunity to interact with experts in technology innovation and transfer and to learn the fundamentals of effective research translation and innovation. It helps me begin to set up new goals for future research."

—Weihua Wang, CCI Solar Team, CalTech

2009. After a screening process that invited applicants from NCIIA programs, nine ventures were selected for the inaugural Venture Well Cohort in January 2009:

Medical Device and Diagnostics

- **PneumoCheck**, *Georgia Institute of Technology* - specimen collection device for diagnosing pneumonia
- **cVision Medical Solutions**, *Johns Hopkins University* - noninvasive measurement of central venous pressure
- **Logimed Inc.**, *Stanford University* - inexpensive device for easy surgical tissue manipulation

Green Materials

- **Ecovative Design**, *Rensselaer Polytechnic Institute* - natural alternatives to synthetic foams and plastics
- **Whole Tree Inc.**, *Baylor University* - proprietary composites using coconut fibers plus products from coconut pith
- **Aspen Sciences**, *Brown University* - safe and effective mercury vapor capture

Bottom of the Pyramid Customers

- **Husk Power Systems**, *University of Virginia* - power plants using rice husks serving off-grid customers
- **mPedigree**, *Dartmouth College* - combating fake pharmaceuticals via mobile phone authentication
- **PowerMundo**, *Colorado State University* - worldwide distribution network for clean tech products in emerging markets

Venture Well Forum

Venture Well Forum is an invite-only, annual event where entrepreneurs engage with a collaborative network of peers, advisors and investors. The inaugural Venture Well Forum was held at the NCIIA annual conference in Washington, D.C. on Saturday, March 21st. The event was an exciting opportunity for innovative teams and investors to meet and consider possibilities for collaboration and future investment.

In addition to the Venture Well teams, participants included representatives from B Corporation, Johnson & Johnson Development Corporation, Qualcomm, Grey Ghost Ventures, The Case Foundation, the Angel Capital Association, and many others.

The inaugural Venture Well Forum was well received by participants and will become an integral part of the program in 2010 and beyond.



Competitions and awards

BMEidea 2009

The 5th Annual BMEidea Competition was successfully completed. In fall 2008, 31 first-stage (one-page) applicants received \$500 stipends provided by the National Science Foundation to prepare their final submissions in February 2009. Thirty-two full proposals were reviewed in April. Three finalist teams were honored at the Medical Device and Diagnostic Industry East Convention in New York City. They were:



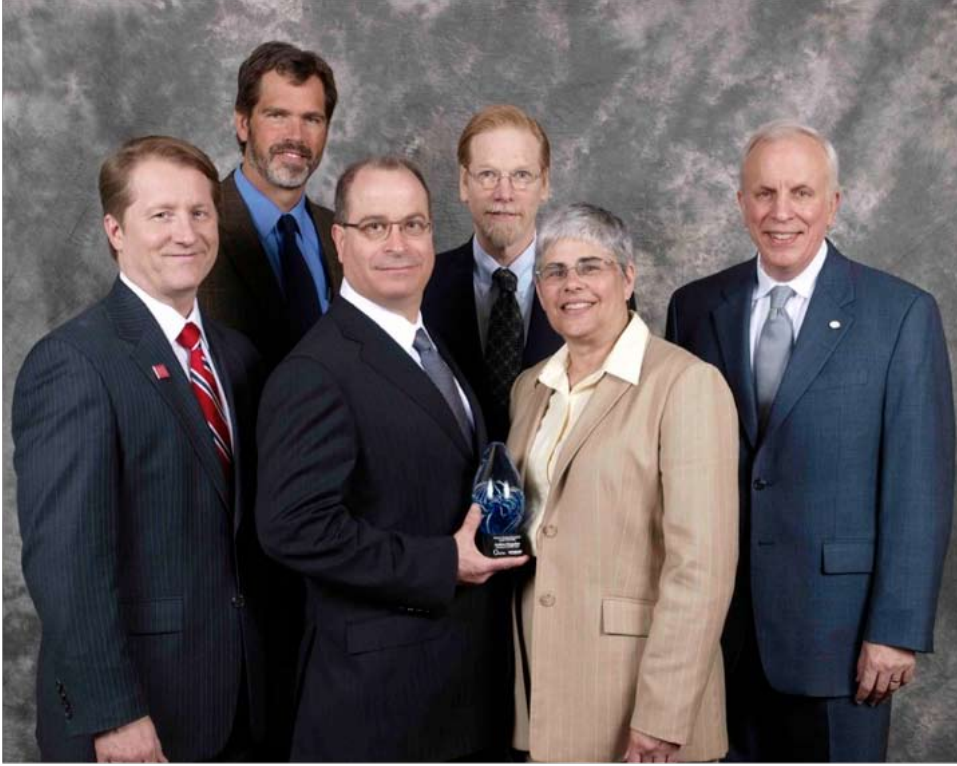
- First Place Winner: **Lab-on-a-Stick**, *Stanford University*. An elegant technology for diagnosing illnesses with an inexpensive disposable “stick” pre-treated with a potentially wide range of protein receptors, which could be especially useful in remote areas where access to diagnostic labs may not be possible.
- Second Place Winner: **Single Port solutions: The SurgiSIL**, *University of Cincinnati*. An innovative surgical access port that allows surgeons to perform minimally invasive laparoscopic procedures through one incision with higher precision and speed resulting in better patient outcomes and faster recovery.
- Third Place Winner: **Novel Biosensor to Measure Vitamin D Levels in Serum**, *Brown University*. An affordable and accurate method of testing vitamin D levels using widely available antibody technology. Simplifies and makes widely accessible testing without need for laboratory facilities.

In addition, three projects were selected as Honorable Mentions:

- **Novel Nanofibrous Scaffolds with Microencapsulated Adipose-derived Stem Cells for Tissue Regeneration**, *University of Virginia-Main Campus*
- **Low-cost, Automated Diagnostics for Tuberculosis**, *North Carolina State University at Raleigh*
- **A Low Cost Ventilator for Use in Large Scale Disasters and Developing Nations**, *Stanford University*

Olympus Innovation Awards

Since 2005, the Olympus Innovation Awards have recognized faculty excellence and innovation in higher education. This year's Olympus Innovation Award winners were announced at a ceremony at the NCIIA's 13th annual conference, held in Washington DC, on March 20. The awardees were:



Olympus Innovation Award

- **Michael Camp**, Academic Director, *Center for Entrepreneurship at Ohio State's Fisher College of Business*

Olympus Lifetime of Educational Innovation Award

- **Gifford Pinchot III**, President Emeritus, and **Jill Bamburg**, Dean Emerita, *Bainbridge Graduate Institute*

Olympus Emerging Educational Leader Award

- **Andrew Hargadon**, Associate Professor, *Graduate School of Management, University of California-Davis*

IntellSEF

In May 2009, more than 1,500 of the world's most promising scientists and innovators gathered to compete in the **Intel International Science and Engineering Fair**. Representing more than 50 countries, territories and regions, each of these students earned top honors at local and regional competitions before being selected as finalists at the 2009 competition.

NCIIA made 11 special awards of \$1,000 each to teams selected by a panel of reviewers. The winning projects reflected the different technology interests of various countries:

- **Gone with the Windmills: An Analysis of the Effectiveness of an Oscillating Wind Energy Generator**, *R.C. Clark High School, USA*
- **A Styrofoam-Decomposing Bacterium from Mealworms**, *National Taichung Girl's Senior High School, Taiwan*
- **A Novel Method for Measuring Sonoluminescent Spectra**, *Cornerstone High Homeschool, USA*
- **Designing and Characterizing Zinc Oxide Nanotube Based Hybrid Solar Cell**, *Private Beyliduzu Faith Science High School, Turkey*
- **Harvesting the Heart's Energy Using Piezoelectric Materials: A Comparison of Right Atrial, Right Ventricular, and Left Ventricular Pacing Sites**, *Champlin Park High School, USA*
- **Using wasted Heat Energy of a Car with Thermoelectric Modules**, *De La Salle High School, USA*
- **Degradation of Antibiotics in Waste Water**, *Gymnasium Brno - Reckovice, Czech Republic*
- **Analysis of Nanofiber-based Scaffolds**, *Rockdale Magnet School for Science and Technology, USA*
- **Bioelectromagnetics**, *Celebration High School, USA*
- **Natural Escherichia Coli 0157:H7 Inhibitors: A Future Innovation in Food Safety**, *Isabel High School, USA*
- **Neural Network Modeling: An Innovative Time and Cost Efficient Approach for Anti-Cancer Drug Development**, *Blue Valley High School, USA*

Innovation Showcase



ASME's **Innovation Showcase** provides a platform for top collegiate student teams to compete for seed money to commercialize their ideas. The program was developed in collaboration with ASME (American Society

of Mechanical Engineers), the I2P program, and corporate sponsors. While demonstrating their technological creativity and business acumen, winners must provide the commercial feasibility of their products to a judging panel and audience of successful innovators, industry experts, venture capitalists, and intellectual property specialists.

The 2009 winners, who were announced at the American Society of Mechanical Engineers (ASME) Meeting in June, each received a portion of \$20,000 in seed funds. The finalists selected to compete in the 2009 IShow were:

- First place: **Peg Restrained Intrinsic Muscle Evaluator (PRIME)**, *Rice University*
- Second place: **Solar ORC**, *Massachusetts Institute of Technology*
- Third place:
 - **SurgiSIL**, *University of Cincinnati*
 - **NuLabel**, *Brown University*
 - **BlueScale**, *University of Houston*
 - **Endocutter**, *University of Michigan-Ann Arbor*

NCIIA 13th Annual Conference



NCIIA's 13th Annual Conference, "Innovations Unlimited: Advancing Education, Investing in Change," was held in Washington, D.C., March 17-20. More than 250 faculty and students attended the meeting, which featured 65 presentations and workshops, the Olympus Innovation Awards, a keynote address by innovation journalist and author Scott Kirsner, a workshop for Sustainable Vision grantees, and March Madness for the Mind, the annual showcase of student innovation.

The new Venture Well Forum was launched at the conference, bringing together select student ventures and invited investors and venture capitalists for learning and coaching sessions.

The NCIIA provided a daylong workshop for grantees of the Sustainable Vision program, which is in its second year. Participants described the successes and challenges they had experienced in their projects, which include field-based outreach in Tanzania, Mali, Vietnam, Honduras and Guatemala.

March Madness for the Mind 2009

More than 500 people attended the March Madness for the Mind showcase of student innovations, held at the Smithsonian National Museum of American History on March 20. Teams presenting included:

PneumoCheck: A Novel Specimen Collection Device for Diagnosing Pneumonia, *Georgia Institute of Technology-Main Campus*

A simple, non-invasive and affordable medical device for collecting specimens to assist in diagnosing pneumonia.

SurgyPack: An Improved Means for Bowel Packing, *Johns Hopkins University*

A medical device that simplifies bowel packing during surgeries by encompassing the bowels, removing the need to use cotton pads.

Affordable Solar Thermal Microgenerator Technology for Rural Co-generation in Southern Africa, *Massachusetts Institute of Technology*

A sustainable, renewable, and affordable solar energy system for rural locations.

MineWerks, *Rensselaer Polytechnic Institute*

Automated systems for detecting and removing unexploded mines.

Therapeutic Systems, *University of Massachusetts Amherst*

A personal deep pressure touch simulation system ('therapeutic hug') for use with autistic children.

Kent Klamp, *University of Virginia-Main Campus*

A medical device intended to create a standardized treatment for uterine atony following C-sections.

Good Intentions, *University of Virginia-Main Campus*

A medical device designed to make self-expanding metal stent placement procedures easier.

Developing World Technologies “WaterCycle Malawi Project”,

Washington State University

A hand-powered water irrigation pump for use in developing countries.

Mashavu: Networked Health Solutions for the Developing World,

Pennsylvania State University

Enabling medical professionals around the world to connect with patients in the developing world using modern technology and communications infrastructure.

Real-Time, High-Accuracy 3D Imaging System, *Catholic University*

Improving 3-D imaging techniques by developing a real-time, high-accuracy, low-cost 3D imaging system.

Dizziness Diagnostic Device (D3), *Johns Hopkins University*

A motorized head-moving device that effectively diagnoses dizziness.

TorchCord: Coyote Inventors, *Clarksburg High School*

A pressure-sensitive illuminated computer cable, to aid in cable identification.



Funders

The Lemelson Foundation



The Lemelson Foundation launched the NCIIA in 1995 and continues to support its ongoing programs and many new initiatives. The Lemelson Foundation celebrates and supports inventors and entrepreneurs in order to strengthen social and economic life.

Established in 1993 by Jerome Lemelson, one of America's most prolific inventors, The Lemelson Foundation sparks, sustains and celebrates innovation and the inventive spirit. It supports projects in the U.S. and developing countries that nurture innovators and unleash invention to advance economic, social and environmentally sustainable development. To date the Foundation has donated or committed more than \$150 million in support of its mission.

The Foundation's programs stem from a three-pronged strategy:

1. Recognition - The Foundation works to recognize and celebrate successful inventors, and develops programs that reward inventive minds. It also supports policy and educational initiatives that foster cultural appreciation of innovative creativity.
2. Mentoring - Because a wise advisor and a supportive environment can make all the difference in an inventor's journey, the Foundation supports high-caliber mentoring and education for young inventors. This mentoring support helps innovative people overcome the many obstacles that may block the path leading from potentially significant innovations to products that change people's lives.
3. Dissemination - The Foundation believes in the value of spreading sustainable technologies that can create economic opportunity and improve lives in societies that can benefit most from such advances. It also researches and disseminates information that highlights the role of invention in society.

Myer Memorial Trust

In FY08 NCIIA received a grant from the Meyer Memorial Trust to support emerging entrepreneurs in under-graduate programs at universities in Oregon. In FY09, the NCIIA worked with Oregon State University, Portland State University and University of Oregon to stage a series of Invention to Venture workshops designed to educate student entrepreneurs and provide them with follow up mentoring. Meyer Memorial Trust invests in people, ideas, and efforts that deliver important social benefits to Oregon and southwest Washington.

National Science Foundation

During FY09 NCIIA secured six grants totaling more than \$1.4 million from the National Science Foundation (NSF), to enable expansion of research in the field of technology entrepreneurship education and evaluation and entrepreneur support activities. The data collected from these studies will position NCIIA as an important source of information and resources in these areas.

These grants support two research studies on entrepreneurship education in the U.S., a new track on educational innovation for the NCIIA Annual Conference in 2010 and 2011; and customized workshops focusing on innovation and entrepreneurship in the research environment for two prestigious NSF programs with significant graduate student participation (IGERT and Centers for Chemical Innovation).



Grant Number	NSF Grant Programs
0602484	Integrative Graduate Education and Research Traineeship; BMEidea Awards
0817394	Course, Curriculum and Laboratory Improvement, phase 1
0835992	Innovations in Engineering Education, Curriculum, and Infrastructure
0920877	Chemical Centers for Innovation, phase 1
0934826	Course, Curriculum and Laboratory Improvement, phase 2
0926490	Chemical Centers for Innovation, phase 2

