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Hsinchun Chen  
Regents Professor, University of Arizona

# Innovator of the Year

By Sheryl Koffman

PHOTO: CHRIS MOONEY



The ingenuity, intellect, vision, tenacity and entrepreneurship of University of Arizona Professor Hsinchun Chen produced crime fighting and healthcare tools used throughout the world – making him a multimillionaire in the process.

An international leader in the development of artificial intelligence, Chen has resisted the lure of Silicon Valley and remains dedicated to his work at the UA. Over the past 24 years he's received 82 research grants totaling more than \$30 million.

Chen is founding director of the Artificial Intelligence Laboratory and the E-Commerce Lab at UA's Eller College. For his groundbreaking accomplishments, the McClelland Professor of Management Information Systems recently added three more honors:

- Chen received the Innovator of the Year award at the UA's 2013 Innovation Day
- He holds the Thomas R. Brown Chair in Management and Technology
- He is now a Regents' Professor, an honor reserved for the top three percent of the UA faculty.

His Google Scholar H-index is 64 – ranking him as one of the top four information science faculty in the world.

Chen developed the Dark Web project to track terrorism online as well as the crime-fighting product COPLINK, which allows law enforcement agencies to access information from multiple databases and connect the dots among criminal activities.

Chen was nominated for Innovator of the Year by Leonard M. Jessup, dean of Eller College.

After Chen developed the technology for crime data mining and intelligence visualization, he went on to found his own company – Knowledge Computing Corporation – in partnership with Tucson developer Donald Diamond. Diamond's team "was instrumental in commercializing COPLINK and making it a success in the market," Jessup said.

After the spin-off software company successfully commercialized the COPLINK system, it merged with a leading intelligence analytic company in 2009. Two years later the system sold to IBM for half a billion dollars. It is

currently used in 24 NATO countries.

"I always try to create a win/win situation for everybody involved. This is a research university," Chen said. "We want to make an impact."

Chen, who came to the UA in 1989, has served as advisor to domestic government and international research programs in digital government, digital library and medical and international security research.

The COPLINK venture began after one of his students, a Tucson Police Department sergeant, asked if there was a better way to collect and assess information to track crime suspects. The officer eventually went to work for Chen in the company created through this venture and also became a millionaire.

Chen is working on two major information technology projects – one inspired by COPLINK, the other he started before COPLINK took off.

His Dark Web project is funded in part by the U.S. Department of Defense, Department of Homeland Security and CIA. It is aimed at capturing real-time data – in Pashtu, Arabic, Russian, Chinese and other languages – to aid in anti-terror activity around the world.

The Dark Web project has one of the largest databases in the world, tracking websites, blogs, forums and multimedia documents generated by terrorists.

Chen also resumed earlier work on a data mining and sharing system called DiabeticLink, a tool to help millions of people with diabetes manage the disease and prevent blindness and amputation.

"I want to have impact," Chen said. This work is concentrated in Asia for now, where he has access to medical records. Chen is from Taiwan.

The medical management tool is designed to be marketed directly to patients with chronic disease, to help them manage their health. Chen said he began with diabetes and is moving on to Alzheimer's, Parkinson's and lung cancer.

The health management tool is designed to serve 24 million people in Taiwan and as many as 1.6 billion people in China, he said.

In March Chen was awarded the Thomas R. Brown Chair in Management and Technology. The chair honors faculty whose professional accomplishments mirror those of its namesake. Brown co-founded Burr-

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## Student Technology Innovator of the Year

Jared Griebel was selected Student Technology Innovator of the Year at the 10th annual University of Arizona Innovation Day.

Griebel is a doctoral candidate in the UA department of chemistry and biochemistry. His work could have wide application in the petroleum, electronics and auto industries.

Like Professor Hsinchun Chen, named Innovator of the Year, Griebel has a dual focus – research and real-world applications that provide opportunities for business to innovate and thrive.

Griebel, 25, developed a new material from waste products using elemental sulfur that can replace the costly fabrication of the lithium-sulfur battery. Griebel said his work could lead to the creation of economical, next-generation automobile batteries.

The basis for the technology he is working on "goes back 50 years to when the oil industry took hold," he said.

"When no one expects you to be able to do it and apply it, it's a great thing," he said of his discovery. "We're taking waste material and turning it into renewable energy."

Dozens of student research projects were displayed at the Innovation Day event.

Among them was Woundmatics, a patent-pending technology that has the support of three private-sector investors. Woundmatics aims to save lives and millions in healthcare costs by reducing the amputations of toes, feet and legs in people with diabetes. The device captures thermal and visual images of wounds and analyzes them with patent-pending algorithms. The work is in collaboration with the UA's Southern Arizona Limb Salvage Alliance.

### Other Innovation Day Honors

Attorney Lawrence M. Hecker was honored as Technology Community Partner for his decades of work in capital formation, business startup and corporate finance.

Attorney Donald Pitt received the Lifetime Achievement Award for his efforts as the longtime chair of Campus Research Corporation, as well as for helping UA to purchase the former IMB site which is now the UA Science and Technology Park. He was recognized for service on the Arizona Board of Regents from 1983 to 1994.



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Brown Research Corporation in Tucson in 1956 and led the firm for four decades. Burr-Brown was acquired by Texas Instruments in 2000.

Sarah Smallhouse, president of the Thomas R. Brown Foundations, said, "Dr. Chen's innovations will surely benefit mankind in important ways."

In May Chen was named Regents' Professor – an elite accolade reserved for faculty members with exceptional achievements that brought national or international distinction.

Chen is "an innovator who is turning ideas into real impact," Jessup said.

The UA is committed to helping researchers like Chen take their innovations to market. That's why it established Tech Launch Arizona, led by David N. Allen. It's designed to centralize and expand a number of diverse functions around the university into a single focused resource.

Tech Launch Arizona is developing a roadmap to demonstrate how inventions and knowledge developed by faculty

and students can be expedited into the market. The goal, Allen said, is to help intellectual property resulting from UA research benefit the world.

Chen said that Tech Launch Arizona "will provide the support we wanted" to help commercialize university research.

"While acknowledging the research that has been done – and the impact of a research institution this size – I think we can do more."

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## Leading Edge Researchers

Leading Edge researchers who demonstrate excellence in technology and innovation were recognized at University of Arizona Innovation Day 2013. They are:

Dr. David Armstrong and Manish Bharara are developing smart wound imaging shoe insoles that would provide real-time feedback to manage foot pressure in diabetics and prevent amputation.

Dr. Leslie Boyer oversees development of antivenoms to neutralize the effect of scorpion, snake and spider venoms.

Lars R. Furenlid is developing methods and instrumentation for molecular imaging in live tissue to advance detection of cancer and heart disease with a minimally invasive method.

Salim Hariri is developing algorithms for cyber security to automate responses from computers, networks and information systems to alert the masses in cyber attacks and accidents.

Raina M. Maier studies biosurfactants as "green" replacements for the more toxic synthetics used in food, pesticides, energy production, remediation, consumer electronics and medicine.

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