

U.Va. Venture Summit Tackles Energy Frontier and Big Questions

by Brevy Cannon

On Thursday and Friday, the University of Virginia hosted its second annual Venture Summit, bringing together U.Va. researchers and some of the nation's leading venture capitalists – several of whom graduated from U.Va. – representing roughly \$20 billion in capital.

This year's summit focused on the burgeoning revolution in energy technologies, a transformation that some estimate will involve 10 times the amount of money generated by rise of the Internet.

"That means the opportunities will be 10 times bigger," Thomas Skalak, U.Va.'s vice president for research, said Thursday.

"Innovation is the key to the creative economy, and venture investment is critical to fuel innovation," he said. "Innovation can be hard to recognize until it suddenly bursts into view."

The goal of the summit, he added, was to enable innovative ideas spawned on Grounds to be seen by investors who can help those ideas break into the market and impact the world.

U.S. Rep. Tom Perriello opened the summit with a vision of how Virginia's Fifth Congressional District, which stretches from Charlottesville to Southside, is well-positioned to be a leader in the coming era of energy innovation, thanks to its mix of former industrial towns, abundant farmlands, great universities like U.Va. complementing a strong community college system, investment funds available from the Virginia Tobacco Commission, and a workforce ready for a mix of high-tech and low-tech jobs in the energy industry.

Energy innovation is already afoot in the region, he noted. His district director, Ridge Schuyler, cited several examples. The nuclear energy industry has a growing footprint in the Lynchburg area (including research and distance education partnerships with U.Va. The state's third-largest dairy farm is working to turn cow manure into electricity with a pioneering anaerobic digester. Danville has built an "energy business park" with its own smart power grid. A truck stop in Bassett is using canola to make biodiesel and overcoming low gas prices by selling food-grade canola oil and glycerin byproduct to supplement the revenue from the biodiesel.

To support and promote such ventures, the government must set rules and incentives that send the right market signals to unleash massive private investment in the energy industry, Perriello said, adding that politicians should not be in the business of trying to pick which emerging energy technologies

are winners and losers – a view echoed later by several venture capitalists.

America is missing a huge opportunity by being slow to recognize that energy will be the greatest job and wealth creator in the world over the next 25 years, said U.S. Sen. Mark Warner, a former governor of Virginia and an investor in tech companies in the 1980s and '90s, including one that eventually became Nextel.

In the energy sector, the U.S. is "getting our lunch eaten" by Europe and China, both of which have strategically promoted emerging energy technologies like next-generation nuclear plants, solar and wind power, he said.

To catch up, America needs to increase tax credits for corporate research and development spending and dramatically reduce business taxes, which can be offset by adding a value-added consumption tax, as much of Europe has, Warner suggested.

The nation also needs "radical re-thinking" of higher education, he said. Spiraling costs are pricing out the middle class. The nation needs to reconsider longstanding traditions such as whether high school and college both need to require four years, and how to better link the two so that colleges more seamlessly give credit for advanced courses taken in high school.

In later sessions, several U.Va. professors presented their energy-related research.

Computer science professor Sudhanva Gurumurthi explained his work, funded by Google, Intel and Hewlett Packard, to improve the energy efficiency of Internet data centers, which already consume more than 2 percent of the nation's electricity.

Jason Papin, a professor of biomedical engineering, discussed how his research creating digital models of cellular systems helps drug makers better combat dangerous pathogens.

Lisa Colosi, a professor of civil and environmental engineering, talked about the controversy created by her life-cycle analysis of algae's potential as an alternative energy source, which raised questions about its viability.

Several panel discussions at the summit wrestled with the question of how the U.S. can better support and stimulate business innovation, and what role the government and higher education should play.

At the Darden School of Business, more students than ever before are going into entrepreneurship rather than working in finance and investment banking, Darden dean Robert Bruner noted. Just a week earlier, Darden launched a new i.Lab as part of efforts to teach students innovation and how to bring ideas to market.

Darden professor Greg Fairchild, director of Darden's Tayloe Murphy International Center, explained how Community Development Financial Institutions – tax-advantaged, public-private quasi-banks – have funneled about \$23 billion into "emerging domestic markets" like Southside Virginia. Bank loans, primarily from small community banks, remain the largest source of funding for American small businesses, especially in rural areas, he added.

A study by the Kaufmann Foundation found that the creation of new jobs is driven primarily by new businesses, noted J. Stephan Dolezalek of VantagePoint Venture Partners.

When a panel of five venture capitalists was asked about what can be done to better foster student interest and readiness to start companies or become venture capitalists, the panelists noted their own varied educational paths at U.Va. – having majored in astronomy, architecture, biomedical engineering, drama and economics.

Successful entrepreneurs don't tend to follow a predictable educational pathway, such as business school, said Sandy Miller of Institutional Venture Partners. "The people who had the option to work at Goldman Sachs don't start companies."

Simply putting successful entrepreneurs, venture capitalists and students together in the same room may be a more successful strategy to encourage entrepreneurship, suggested Robert Paull of Lux Capital.

"I would like to see more interaction between seasoned operators and the kids with ideas at schools like U.Va. and Virginia Tech," he said.

Venture capitalism offers mentorship and discipline to those interested in developing businesses, noted Frank Levinson, founder of Small World Group, who would like to see those benefits extended to rural regions that struggle to generate economic development.

Levinson predicted a worldwide increase in venture capital because it supports enterprise so efficiently. (Seventeen percent of U.S. gross domestic product is created by venture-funded businesses, while venture capital consumes only 0.2 percent of GDP, explained one participant at last year's venture summit .

A public-private partnership model created by Israel in the 1990s propelled the tiny country to having the world's second-largest venture capital industry, behind the United States.

Singapore recently copied the model, Levinson said. The Singapore government is putting forward roughly \$50 million to fund 100 companies with \$500,000 each, and seven of the

world's best venture capital firms, including Levinson's, will choose the Singaporean companies to invest in while putting up some of their own money in the process.

Lucrative terms attracted interest from more than 30 of the world's leading venture capital firms, Levinson said. The firms must put up 15 percent of the total investment, matched by an 85 percent share from the government, all of which purchases preferred stock in the fledgling company. If the funded company does well, any time in the following two years the venture firm can buy out the government's stake of preferred stock for the original value of \$500,000, landing an instant windfall profit. The firms can walk away from the less successful companies.

"This is pure job creation," said Levinson, and a "no-brainer" from the perspective of the investing government, because much of such early-stage venture funding goes toward staffing, creating new jobs that will generate tax income and spending that ripples through the local economy, even though some of companies will ultimately fail to fly. The successful ones will be powerful job creation engines.

"The key is that the government has decided to invest in funding new companies, but is letting qualified professionals pick who gets the money," he said.

Levinson has recently been meeting with lawmakers in D.C., including Warner, as well as state lawmakers in Virginia and Indiana, to promote the use of this model in the U.S.

Levinson predicts that this Singapore/Israel investment model may well be widely copied around the world in coming years, eroding the U.S. competitive advantage from having pioneered the world's largest venture capital industry.

The U.S. industry is struggling with lower average returns than in the recent past and longer average time spans, often seven to 10 years, before they can get their money out of an investment.

Several speakers batted around the question of whether that is a result of too much money chasing too few business ideas that are ready to launch, as Darden professor Susan Chaplinsky maintained, or whether the money just isn't finding the right recipients from a plentiful supply of promising business ideas. Numerous researchers at U.Va. subscribe to the latter view, Skalak noted, as he commonly hears how they struggle to land funding to launch their research-based business plans.

Levinson suggested that researchers and investors both could benefit from putting more emphasis on shorter-term early-stage funding – making smaller bets on more companies, and getting out sooner, rather than waiting for (and depending on) a one-in-a-thousand "home run" company that grows to dominate an emerging industry. That model was well-suited to the dot-com boom, he noted, but making more smaller bets would give more ideas a chance to reach the market and could still generate the healthy average returns.

On Saturday, the assembled venture capitalists got a chance to make some of those smaller bets as they listened to business plan pitches from four fledgling U.Va. start-ups and five student concept pitches, drawn from the Darden School, the McIntire School, the School of Engineering and Applied Science and the School of Medicine.

All six companies that presented their business plans at the 2009 Venture Summit ended up receiving funding, Skalak noted.