

# Univ. Research Execs See Science Economic Benefits

BY ALAN, ON JULY 15TH, 2015

SCIENCE & ENTERPRISE



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15 July 2015. Senior research executives at 10 U.S. universities described the benefits of scientific research to their campuses, communities, and nation at a roundtable discussion today in Washington, D.C. The forum, organized by the [Science Coalition](#) and [Association of American Universities](#), also described perils of uneven federal research funding as well as related dangers of increasing politicization of federal research funding agencies.

The research executives by and large found collaborations between academic researchers and businesses beneficial, but noted some caveats. Fred King, vice-president for research at West Virginia University described a spin-off company from his campus that developed a device that identified biomarkers of stroke, to help diagnose the type and timing of strokes for more timely and accurate treatments. Another spin-off company King described is developing a portable PET scanner that makes it possible to scan brain activity while people carry on their day-to-day lives, and gain more accurate data for diagnostics.

David Conover, vice-president for research at Stony Brook University, highlighted a collaboration model that brings start-up companies from outside the university system. Conover said the program, part of the statewide Start Up New York campaign, attracted 18 companies to the campus, generating 180 jobs and \$12.7 million in revenues. In addition, Stony Brook is part of a consortium of 5 campuses on Long Island creating a venture capital fund to support university spin-off enterprises.

Mark Redfern, University of Pittsburgh's vice-provost for research, outlined that institution's annual Big Ideas competition that attracts some 100 student teams from across the campus, not just engineering students. Teams compete for cash prizes that provide seed capital for their budding enterprises, as well as training from economic development organizations in the region.

In response to a question from Science and Enterprise, David Wynes, vice-president for research administration at Emory University in Atlanta noted that the recent financing boom in biotechnology led to increased research funding as well as licensing income for the university, an economic situation that turned around since the economic downturn in 2008.

Jay Walsh, vice-president for research at Northwestern University, said at his campus research support is now coming from a variety of sources, including businesses, even in the local Chicago community. Walsh also noted that more research on drug discovery was finding its way into start-up companies, which was driving a closer relationship between scientists and companies commercializing their findings.

Walsh added that close relationship, however, sometimes presents a challenge at managing the relationship between the campus and company. Other panel members also pointed out the need to watch for conflicts of interest, while Maria Zuber, vice-president of research at MIT said they advise students “to first get your degree, then start a company.”

### Keep politics out of science

While the research executives largely bullish on business and economic collaborations, they expressed considerably less confidence in the increasing politicization of science in Washington. Gloria Waters, vice-president and associate provost for research at Boston University, remarked that politicians need to understand how science works. “Science is a search for the truth,” said Waters, “and sometimes the results will not be what one side or party wants to see, but the results are the results.” Waters added that scientists consider finding the truth their contribution to the national interest.

University of West Virginia’s King underscored the importance of speaking directly to citizens in making the case for the benefits of science. “We spend a lot of time trying to make our case to members of Congress, but what they do is listen to their constituents,” noted King. “We see the surveys where people do not seem to understand the value of research for their taxpayer dollars. And we have to be much more effective in how we make that case to them.”

The panel likewise highlighted the difficulties caused by favoring some types of research over others, particularly when withholding funds for political reasons. One area threatened by political forces is social science research. MIT’s Zuber told how studies of water use in western states suffering from drought, for example, are very much studies of human behavior.

Pittsburgh’s Redfern pointed out that cyber-security, a hot topic in Washington, also has a large human behavior element. Northwestern’s Walsh added that studies of education draw a great deal from social science, and show for example that voucher programs in Florida are benefiting students in both public and private schools.

<http://sciencebusiness.technewslit.com/?p=27372>

## Academic Medical Researchers Upset By Strings Attached To Fed Funding

FDA Week (Subscription Only)

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Representatives from academic universities across the country raised concerns with a trend toward increased stipulations on federal funding coupled with a decreasing amount of dollars. The group also highlighted what it views as lawmakers' misconceptions about the academic medical research industry.

During an "All Things Research 2015" roundtable, hosted by the Association of American Universities and The Science Coalition, on Wednesday (July 15), senior research officers provided insight into how, in an era of limited research funding from the federal government, their universities were coping.

As federal dollars come with more stipulations, namely that the investments are put towards research in the national interest, institutions like the Massachusetts Institute of Technology (MIT) are urging for a broader portfolio.

"Outstanding science in any field is in the national interest. We need to be at the forefront of science and, frankly, we don't know today where the answer to a certain problem and what direction it is going to lie," Maria Zuber, vice president for research at MIT. "There have been discoveries in medical sciences that have started in a physics labs, etc., and so by vetting and narrowing in early one limits one's possibility in terms of discovery."

**Other attendees agreed, citing the need for both top-down and bottom-up funding.** "There is science that needs to be done in national interest that's driven by imperatives that occur around the world," David Conover, vice president for research at Stony Brook University, said. "But at the same time many of our most important discoveries came from the bottom-up, from the curiosity driven research that individual scientists are doing that, at the time, you know, had no clear, specific national interest. We have to make sure that both kinds of science are being adequately funded."

Training researchers to learn from failures, as well as successes, is another aspect of basic research we may be losing as pressure increases to deliver quickly, they said.

"One of the problems we face today is that as we try to focus on short-term goals...we risk that we're no longer training individuals to be creative, to be thoughtful and to look at experiments closely," said Fred King, vice president for research at West Virginia University. "When an experiment doesn't do what you think it was supposed to do...[we need to be] thinking innovatively, creatively about how we can turn that around and make use of it."

One route to reforming the system could be moving past Congress and appealing to voters. "I think one of the things we can do a much better job on is making the case for basic research to the average voter," King said. Until further funding comes, however, universities are finding ways to make up the gap, like partnering more closely with the pharmaceutical industry.

"One of the ways we are coping with limitations of federal funding is to collaborate more with industry," said Michael Pazzani, vice chancellor for research and economic development at the University of California, Riverside. "By combining the university funding, with the federal funding, with corporate funding, I think we can make more of it." **He added that this approach does require research laboratories to meet industry part of the way and "work quickly on their terms."**

Other institutions are looking to alternative areas to save money, including working more closely with fellow universities to reduce duplicative overhead costs, allowing for more of the funds to be used directly for research. "I think in addition to collaborating with other scientists...I think we are starting to collaborate in new ways. A good example is in the building of infrastructure," said Gloria Waters, vice president and associate provost for research at Boston University.

She cited the example of the Massachusetts Green High Performance Computing Center, a project backed by a cohort of five universities that have come together to put all their computing equipment in one space. "It's had incredible payoff in other ways," Waters said. "Faculty that didn't know each other, hadn't worked together previously, now apply for grants jointly."

Another approach, which MIT is utilizing, is to invest campus funds in university research across various concentrations to broaden the scope of potential findings with the hope of a bigger payoff in the end.

"We're investing in funds on campus to address the problem...to drive more creative interdisciplinary research which receive internal funding with MIT that actually encourages/requires collaboration across multiple schools within MIT and hopefully produces results that then lead to external funding with a better chance of success," Zuber said.

While additional funding is welcome, such as that in the 21st Century Cures bill that passed the House last week, the key to successful research that appeals most to the national interest is avoiding the political game and focusing on the science that is going to find answers to the problems we face today is, according to Waters.

"Science is a search for the truth. I think the fact is good science goes wherever it goes," she said. "What scientists need to do is to search for the truth and to follow it and not let politics get in the way."

**The underlying issue, however, may be that Congress doesn't fully understand the research community,** as some panelists voiced their desire for lawmakers to make of an effort to learn what research is about.

"Research is complex and maybe we've been beating ourselves saying that we are not explaining ourselves better, but I think it has to come from both directions," Denis Wirtz, vice provost for research at John Hopkins University, said.

Others pointed to a need for more funding for basic science; specifically for Congress to recognize that simply mandating institutions do applied research will produce the desired results. "If you don't have the basic science behind it, the applied things are never going to come about," Waters said.

The main misconception could also be traced back to an underlying issue, the need to fund a broad portfolio of research. "You always want to be funding, you know, some percentage that is, kind of, way out there," Zuber said. "The idea, if it paid off, which it probably isn't going to, there is a low probability of it, but it would be so dramatic if it did."

What federal and state governments should take into consideration, according to Paul Sanberg, vice president for research, innovation and economic development at the University of South Florida, is the economic impact research universities have on the local community. "We are a huge economic driver in many of our communities," he said. --  
*Joe Williams*

## UC Riverside Leader Part of Science and National Interest Panel

Michael Pazzani is one of 10 officials from universities across the nation that took part in July 15 panel discussion in Washington, D.C.

UC Riverside Today

RIVERSIDE, Calif. ([www.ucr.edu](http://www.ucr.edu)) —[Michael Pazzani](#), the University of California, Riverside's vice chancellor for research and economic development, is one of 10 university officials who took part in a panel discussion on science and the national interest in Washington, D.C. on Wednesday, July 15.

The discussion, "All Things Research 2015," took place at 12:30 p.m. at the Holeman Lounge at the National Press Club. It was sponsored by the Association of American Universities and The Science Coalition.

In addition to science and the national interest, topics of discussion included economic development and the research university and the innovation deficit, which is the gap between federal government funding for research and higher education and what some argue is needed for the United States to remain the world's innovation leader.

Pazzani used the opportunity to talk about two recent UC Riverside commercialization activities, one which involves a start-up company and the other which involves licensing research to an established company.

[Anand Ray](#), an associate professor of entomology, launched a start-up company, Sensorygen Inc., to commercialize a safe repellent that protects ripening fruit from spotted wing Drosophila, a pest that annually causes hundreds of millions of dollars' worth of agricultural damage worldwide.

[Sean Cutler](#), a professor of botany and plant sciences, has conducted research that involves reprogramming plants so that they can survive drought conditions. Cutler, UC Riverside and Syngenta, a worldwide agribusiness company with more than 28,000 employees in more than 90 countries, are engaged in developing technical solutions for drought tolerance in plants.

Pazzani also spoke about what he calls the "infrastructure deficit," that is universities and federal and state governments cutting spending on high tech equipment that is needed to conduct leading-edge research.

Pazzani also discussed UC Riverside's commitment to providing undergraduate students opportunities to conduct research and the diversity of students at UC Riverside, a point that separates the university from others taking part in the discussion.

Other universities that participated include: Stony Brook University, West Virginia University, University of Pittsburgh, University of South Florida, Northwestern University, Boston University, Johns Hopkins University, Emory University and the Massachusetts Institute of Technology.

<http://ucrtoday.ucr.edu/30339>