

## **FUNDING INNOVATION A GOOD USE OF CALIFORNIA TAX DOLLARS**

By Doug Henton

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A new report by the Pew Center on the States and the National Governors Association - Investing in Innovation - confirms that California is a pioneer among the states in funding research and development that solves pressing public problems like climate change. This is encouraging news, but the Golden State shouldn't neglect the power it wields to drive innovation as one of the world's largest consumers of new technologies.

The report, on which I served as a consultant, scanned the 50 states to catalog the range of R&D activity taking place at the state level. It found that states are investing billions in areas as diverse as biotechnology, nanotechnology, advanced manufacturing and alternative energy.

In some instances, states are filling a gap left by federal inaction, as with California's \$3 billion investment in stem cell research. In others, they are supporting emerging industries - such as California's matching support that helped secure a \$500 million investment from British Petroleum in biofuels. In still others, states are funding the basic research that serves as the foundation for new medical and scientific breakthroughs.

The report concludes that successful states should follow some simple guidelines, all of which California does quite well, such as:

Embed investments in a 21st century innovation strategy that moves beyond funding discrete programs to making a coordinated set of investments.

Find your strengths -

and needs - and fund R&D in those areas.

Invest in collaboration. Encourage, or even mandate, that universities, industry and government work together.

Enlist experts. Seek advice from industry, people outside your state, and even from abroad.

Be consistent, but not to a fault. Commit to a cycle of investment and assessment. Measure the results of funding, so you can be sure public dollars are well spent.

California is particularly cited as a leader in promoting collaboration. The California Institutes for Science and Innovation, which consists of multiple University of California campuses working together to solve big problems and drive the state economy, are cited as one success story. So too is the Bay Area Science and Innovation Consortium, which unites industry, universities and federal labs to think through complex issues such as intellectual property.

One undercurrent to the report is the notion that state R&D investments should be connected with industry and economy needs, so innovations are quickly used to make an impact. But another important consumer is the states themselves, which use innovations in fields like health care and energy.

In fact, it is in this role as major consumers of the products of R&D that states, especially California as one of the world's largest purchasers, are uniquely positioned to stimulate innovation and drive the creation of new products and ways of doing business.

Consumption of new technologies, not just their creation, is a powerful driving force for innovation, according to academics like Amar Bhidé of Columbia University's Graduate School of Business. Just take the real-world example of information technology and health care, where rising health care consumption (including by states) and new standards and regulations (many state-driven) have forced innovation designed to improve care and lower costs.

Similarly, state regulation in the climate change arena is clearly accelerating efforts from industry to create more efficient fuels, cars and building materials, and stimulating the growth of renewable energy, especially solar technology.

Government-driven innovations can have a major impact. For example, the Smart Health initiative in Silicon Valley is demonstrating how information technology can be utilized by hospitals and health providers for record-keeping.

While more state spending and regulation will stimulate innovation regardless of how well it is conducted, the result could be highly inefficient, or even counterproductive, unless consumers and producers of R&D are connected. The fact is that all innovation isn't necessarily positive.

States can hedge against inefficiencies by adopting a wide range of "bridging" mechanisms that foster collaboration among consumers and producers and by conducting statewide planning that connects R&D spending to pressing state needs in education, health care and other fields.

One mechanism may be to create the position of science and technology adviser to the governor. According to the State Science and Technology Institute, at least 11 states currently have such advisers. They provide a governor with immediate access to sound advice and serve as a champion to unite science and technology agendas across state agencies. The California Council on Science and Technology, which is composed of leading private sector and university scientists, has recommended that California appoint an adviser.

California is already a leader in smart R&D investing and is well-positioned to be a leader in smart R&D consumption that pushes the boundaries of innovation - and the resulting public benefits - into the stratosphere. Let's grab the opportunity.

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