

Biotech's Road to Growth

Success demonstrates the power of planning

by Joe Bardin



The bioscience industry here is no longer merely a good idea awaiting its time. With an annual economic impact of \$14 billion statewide, according to the [Flinn Foundation](#) — a private nonprofit organization that supports biosciences in Arizona through grants, programs and advocacy and is tasked with tracking the industry — biotech and its Phoenix hub are a legitimate economic success story in which planning, collaboration and innovation play central roles. Or perhaps it's more accurate to say this is the beginning of a success story.

"We're pleased with the progress so far," says Brad Halvorsen, Flinn Foundation vice president of communications. "We've emerged as one of the fastest-growing states in terms of industry growth, but we recognize there's more work to do. It's definitely a marathon, not a sprint."

The significant advancements in biotech in Phoenix have not occurred by happenstance. In 2002, the Flinn Foundation identified the biosciences as a significant potential driver for growth in Arizona. Joined by public and private partners, it commissioned Arizona's Bioscience Roadmap, a 10-year strategic plan for nurturing biotech into being. Now a new Roadmap is being instituted for the next 10 years.

With this new bioscience roadmap, which extends to 2025, Arizona has the "longest-running, continuously managed roadmap of its kind in the US," according to Joan Koerber-Walker, president and CEO of the [Arizona BioIndustry Association](#). This next phase of the Roadmap is projected to increase the economic impact statewide from \$14 billion to \$20.4 billion by 2025, based on current trends. Neither figure includes the considerable impact of hospitals, making the numbers potentially even higher. Jobs can be expected to increase significantly as well. During the Roadmap's first decade, bio jobs in Arizona grew by 45 percent, which was nearly four times faster than the nation as a whole.

The industry measures its success not only in terms of economic impact but diversity as well. "In our first 10 years, we've established diversity across industrial, medical devices, drug and diagnostics sectors," says Koerber-Walker. These include the world-renowned research organization TGen; industry leaders such as Insys, Medtronic and WL Gore; and emerging high-performers like the device company Ulthera.

Ulthera was acquired by Merz in June for \$600 million, which is precisely the kind of payoff everyone associated with biotech would like to see more of.

"Investors look for deal flow," says Robert Green, a veteran of the biotech scene and currently president of [EndoVantage](#), a start-up developing a computer simulation solution for surgery based on personalized patient information. "When investors get a sense of things happening, they become more interested, so each success benefits all of us."

EndoVantage is based on technology developed locally at Arizona State University and Mayo Clinic. It's one of a number of collaborative innovative start-ups, which advocates point to as further evidence of a maturing product pipeline. Another recently newsworthy example involved Charles Arntzen, a Regents' professor and researcher at ASU's Biodesign Institute, who helped contribute to the experimental Ebola vaccine, given to two health workers who contracted the virus.

Venture Capital in Short Supply

To reach these lofty goals, the industry's most urgent need is for more risk capital.

"Access to capital is the first thing all growing companies need," says Koerber-Walker. "These are long event horizons, but a very big payoff for those that succeed."

Halvorsen says emerging firms need access to capital to get across the "valley of death," which is the period in a company's development after seed funding has been used but before they are far enough along to generate sufficient revenue.

Despite the potential payoff, venture capital to Arizona bioscience firms has declined consistently since the first Roadmap's inception in 2002. That year, Arizona received \$111 million compared to only \$22 million generated in 2012. This decline in bioscience venture capital was experienced throughout the country. Investment increased in 2013 to \$37 million, but is still well below levels advocates would like to see. "Increasing this figure is one of the Roadmap goals going forward," Halvorsen says.

In the absence of ample venture capital, the industry has been forced to get as innovative about finance as it is about product development. EndoVantage, for example, got initial funding from the ASU Edson Student Entrepreneur Initiative. Then, through the Arizona Commerce Authority, EndoVantage was named one of six winners of the Arizona Innovation Challenge, for which it received of \$250,000. "That's a huge kick-start," Green says.

Creative Approaches to Advancement

Another factor helping to make up the deficit in venture capital is, according to Green, Arizonans' innate willingness to collaborate. "Most of us come from somewhere else, so we were all strangers here at one point, so we're more open to strangers. Everyone works together, and top people are just a phone call away, to answer a question or help in some way."

Also, according to the Flinn Foundation, Arizona is increasingly commercializing the research that comes out of its universities. Since the first year of the Bioscience Roadmap (2002), Arizona's universities have spun out 71 bioscience companies. One example is Heliae, an algae-technology firm in Gilbert, which employs about 100 people and is growing fast.

While there is a shortage of venture capital, there is no shortage of human capital, according to Sethuraman Panchanathan, ASU's senior vice president of [Knowledge Enterprise Development](#), who was recently appointed to the U.S. National Science Board by President Barack Obama.

"We have more biotech-oriented people than can be employed in Arizona," Panchanathan says. "Talent is not a constraining force. But there's always room to fine tune." He says ASU is collaborating with companies in the space to ensure "our programs meet their objectives and goals." This includes integrating actual company projects within coursework, coordinating student internships and inviting company representatives as guest lecturers.

While advocates of the biotech industry are proud of their accomplishments thus far, they are most excited about what's coming down the road. As Koerber-Walker puts it, "Where we're going is the real opportunity."