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How Bay Area Biotech Stacks Up With the Rest of the World

Gail Maderis 8/23/10

Recently, Newsweek columnist Fareed Zakaria told an audience of biotechnology executives that America's foothold as the preeminent technology innovator may be slipping.

"Bill Gates is the Britney Spears of China," Zakaria said. "But in the U.S., Britney Spears is still Britney Spears."

The reverence our rivals place on science and math is measured appropriately in the second annual *Scientific American Worldview: A Global Biotechnology Perspective*, a thought provoking [framework](#) from which we can judge our own activities in the nation, the state and the region.

The [Worldview Scorecard](#) ranks the leading countries according to their capacities to develop biotechnology and it should come as no surprise that no other nation scored collectively higher than the U.S based on five criteria:

- Intellectual Property and protection of IP
- Intensity of biotech measures the number public companies per capita and the portion of biotechnology spending of overall R&D spending
- Enterprise Support measures the business climate, venture capital availability, and capital availability
- Education/Workforce availability
- Foundations to biotechnology include infrastructure quality and entrepreneurship climate

As a country, the broad diversity of the U.S. scored a walloping 37 in the collective measurement of IP, Intensity, Enterprise Support, Education/Workforce and Foundations. Singapore with a score of 31, Canada 29, Sweden 28 and Denmark 27 rounded out the top five countries. These scores reveal the strengths and weaknesses of each country; for example, Singapore ranks high in Enterprise Support because of its enormous government funding, but ranks low in the Intensity of biotech.

The pillars of the U.S. success according to the Worldview Scorecard are protection for IP, Foundations and Enterprise Support. In essence, our patent system places strong emphasis on protecting intellectual property (IP) which allows for a venture capital investment community (Enterprise Support) to sponsor the

innovation and entrepreneurship climate (Foundations). However, we ranked sixth behind such countries as Sweden, Israel and Finland in general biotechnology Foundations and second behind Singapore in Education/Workforce.

Locally, our perception of success is more skewed because of our intimate relationship with innovation. Our IP policies are very strong. The local tech transfer offices at Stanford, UC San Francisco and UC Berkeley have led to incredible technological breakthroughs. Such innovations have paved the way for Mission Bay's growth and the development of the California Institute of Regenerative Medicine.

Unfortunately, based on California's state rankings on K-12, we may well trail the US's mediocre score in Education and Workforce. More needs to be done to position our current and future workforce for success. California's student performance continues to rank in the bottom quartile in science and the third quartile in math. Although our region attracts a disproportionately high number of foreign graduate students, we need educational conditions that will foster local talent.

While our local community receives high marks for venture capital investment, it is not a business friendly environment. According to the 2010 State Business Tax Climate Index, California ranked 48th and for the fourth year in a row the nation's CEOs ranked California rock bottom in the 2009 Best & Worst States survey for Chief Executive Magazine. For this, I would give Enterprise Support much lower marks. The State's inability to maintain the 20-year Net Operating Loss carry forward, the Singles Sales Factor corporate tax apportionment formula and several other tax provisions available to biotech companies elsewhere significantly inhibits our region's score.

Arguably, you will find no other greater concentration of biotechnology than in Northern California, the birthplace of biotechnology. We stand arm-in-arm with San Diego and Boston/Cambridge. More than 1,300 companies employ more than 100,000 people in intensive R&D activities. In addition, four academic research institutions receive more than \$500 million annually in research funding. Northern California should be ranked well above the national average in Intensity. However, the rapid development of biotech clusters in other countries, as quantified in the Worldview Scorecard, is a good wake-up call that we cannot take our current leadership for granted much longer. We must actively support our industry.

The Worldview Scorecard is a useful tool for assessing and prioritizing our efforts at BayBio. In the chart above we have identified our major programs (and events) that support each of the five pillars. We will continue to use this tool to assess our performance. We are trying to address our standing in the world and correct the items that matter to our community. We welcome your thoughts on what else we should be doing. Email us at info@baybio.org.