

For more than a decade, Mass Insight has played an important role in the state's science and technology policy development by facilitating university-industry-government leadership groups and publishing agenda-setting research reports. This collective effort has helped shape the state's developing science and technology strategies.

Mass Insight's Innovation Partnerships Network will build on this strong history. Through interviews both with CEOs/experts and with industry and university representatives of promising research partnerships, the first-phase research study will produce:

- A Science +Technology policy agenda - particularly timely in Massachusetts for the new governor - to incentivize new large-scale collaborations between industry and universities based on a review of 10 years of Massachusetts S+T policies and investments – and a federal funding agenda for the congressional delegation.
- A road map report for “innovation partnerships” in research, with talent development as an embedded element, benchmarking current best practices against emerging models.

The following interview is from a series completed by Mass Insight to develop expert perspectives.

Dr. Robert Atkinson is one of the country's foremost thinkers on innovation economics, conducting ground-breaking research projects on technology and innovation and serving as a valued advisor to state and national policy makers. His most recent book, “Innovation Economics: The Race for Global Advantage,” focuses on the critical role science and technology plays in the economy. Atkinson and his co-author, Stephen J. Ezell, argue that the U.S. could fall behind in the global innovation race unless it develops public policies and economic strategies to keep pace with its international competition.

Mass Insight Global Partnerships had the opportunity to sit down with Atkinson recently to get his thoughts on the importance of university-industry partnerships and why now is the time to be thinking about a new model for those collaborations.

Top Perspectives:

The stakes for getting this right are so much higher now given that other countries are significantly outperforming the U.S. when it comes to funding research and supporting technology and innovation.

This issue is not well understood by federal policy makers, who do not grasp the need for a new framework for institutional innovation in which industry plays an active role in driving or influencing research.

Many people at the highest levels of industry have a distorted view of where innovation comes from and don't understand that these partnerships can be an important part of their competitive advantage.

We need a bold incentive system driving university-industry partnerships that really says to people, “Change your ways.”

Why should we be thinking about university-industry partnerships now? What's the urgency? It's pretty clear that federal funding for research efforts will not be increasing in any substantive way.

The best we can hope for are increases that barely keep up with inflation. Given that, universities need to be more open to new and alternative ways of funding research.

Additionally, you could argue that the types of problems and challenges we're facing in the 21st century require a much more inter-disciplinary and problem-oriented approach than has been true in the past. To solve those challenges, we need a new model.

Finally, the stakes for getting this right are so much higher now. Other countries are starting to significantly outperform the U.S., at least when it comes to funding research. While the U.S. hasn't lost its innovation edge yet, eventually other countries will catch up or surpass us.

What are the unmet needs on both sides of the university-industry border? From the industry perspective, universities often try to extract too much value from potential partnerships with restrictive licensing rules, and they also often struggle with timeliness – two issues at the top of the industry priority list.

Additionally, many companies simply don't have the bandwidth to take a leadership role in setting up partnerships, so someone needs to "lead them to water."

On the university side, seeking out an industry partnership just isn't natural. The first inclination is still going to be to go after a more traditional federal funding source. There's more

awareness of the need to look to industry for partnerships today than there was five years ago. But it's a slow process, and I think there's a real need for someone to jumpstart it.

How do partnerships create value? The value comes in a number of different ways. Most obviously, partnerships can be a source of funding and can also help universities with training and developing their PhD candidates.

But beyond that, partnerships can give university researchers a deeper insight into the real technical challenges being faced by people who are trying to innovate in the "real world" and thus can help orient or align their work against those problems. On the flip side, university researchers may have perspectives on or insight into research problems that companies do not, so there is cross-pollination of ideas in that direction as well.

Finally, partnerships can introduce efficiencies into the innovation space by reducing the amount of duplicative work being done on early stage, pre-competitive research. If companies and universities are partnering on projects in this space, they can save time and money.

How do you know when a partnership is working? Money is certainly the simplest way to measure the success of a partnership – if industry likes what a university is doing, they'll fund it – but it's not perfect. Other metrics to look at include licensing agreements, formation of new firms or start-ups, patents awarded. The problem with some of those measures is that there is the potential for distorting incentives

in the wrong way.

One way to approach this would be to create a set of "shadow" indicators to measure how good universities are at partnering with industry and then publicize those indicators by releasing a list of the best and worst universities. Even without attaching consequences to the measurement system, that type of public scrutiny could influence behavior.

What needs to be in place to make a partnership successful? Industry needs to have some skin in the game – money – otherwise they won't prioritize the partnership and won't align their best people against it.

The governance structure of any partnership should be collaborative, with both sides having a role. A hands-off approach – giving money to something, then coming back a year later hoping something's happened – is much less likely to produce good results.

Finally, it's important to establish clear expectations for the partnership at the very start. That way people know exactly what they're getting, and there are no surprises later on.

How well is this issue understood by policy makers?

At the federal level, it's not understood very well at all. Most policy makers still buy into a linear model of research, which universities love to perpetuate because it leads to free money with no strings attached.

What's missing is an understanding that there's a need for new kinds of partnerships – a new framework for institutional innovation – in which industry plays an active role in driving or influencing research.