

Growing a New Space Economy for Our Region

One of the first tasks of the Pittsburgh-based Keystone Space Collaborative was commissioning a market report to tally up all the tech companies and organizations from across the region — Pennsylvania, Ohio, and West Virginia — which are receiving funds from NASA or space-related grants from the Department of Defense.

“The numbers of space projects and participants in the region was impressive,” said Justine Kasznica, the industry group’s board chair and a founding member. “We had about 550 participants from across the tri-state region, and this without any dedicated cross-region political championship for the space industry.” Those companies brought more than \$2 billion in government funding into the region, the 2021 market report showed. “That number puts us very squarely on the map. It’s a baseline,” she said, “from which to evaluate our future growth.”

With the Keystone Space Collaborative, she hopes to organize and promote space-relevant technology companies across the tri-state region — which are more plentiful and promising than most people realize, Kasznica said.

Kasznica is a tech and corporate attorney, and Chair of the law firm Babst Calland’s Emerging Technology Practice and leading advocate for the region’s space economy.

Leveraging Pittsburgh’s robotics hub.

She has worked with Pittsburgh robotics companies for 14 years. For the last decade, she has served as outside general counsel to Astrobotic Technology, an aerospace robotics company spun out of Carnegie Mellon University that has acquired more than \$500 million in NASA contracts and worked on three missions to the lunar surface.

As the Pittsburgh region developed into a robotics hub, it organically gathered the kind of companies whose work is valued by NASA, the DOD and the growing sphere of private spaceflight companies, all of which need more than rockets and rovers.

“Our region brings [together] robotics, advanced technology, advanced manufacturing expertise, material science work, software development, and life sciences research,” Kasznica said. “These are all core pieces of a vibrant future new space economy. So as I look to the future — three to five, or 10 years from now — I really see this region emerging or reemerging at the forefront of the new space economy.”

The global space industry grew to \$469 billion in 2021, according to the Space Foundation, and is expected to expand to \$1 trillion by 2040.

This growth was not impacted much by the Covid-19 pandemic, and space technology is sheltered during economic downturns, said Kasznica. “Space, because of its historical connection to the public sector and public funding — particularly defense and NASA spending — is somewhat insulated, in terms of its contribution to national security needs.”

Thanks in large part to her work with Astrobotic, Kasznica developed a law practice in space technology. “Over the past decade, I’ve gotten to know and build relationships with a number of space legal mentors, regulatory experts, a community of fantastic industry



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professionals, folks from NASA, folks from the DOD, and really have immersed myself in the space industry,” she said.

Space industry needs regulatory and commercial legal support.

The industry’s legal needs can be complex. “I saw a real need for sophisticated regulatory and commercial legal needs by the space companies,” Kasznica said. “They have export control issues. They have regulatory issues. They have a slew of sophisticated commercial issues. But many of these are nascent companies with limited resources.”

New companies in the expanding field may not be able to afford the kind of legal expertise bought by longtime aerospace and defense contracting giants. This is a need Kasznica and Babst Calland are addressing, she said.

“We now have a team of lawyers who are training up ... to really be able to offer a much better value at the same sophistication, same ability to problem solve, but at a rate that is commensurate with this region’s expectations.”

Keystone Space Collaborative is the centerpiece.

The Keystone Space Collaborative, of which Babst Calland is a founding sponsor, provides networking opportunities, advocacy and promotion and an “ecosystem map,” which is especially valuable because the space technology industry is supported through relationships with universities, military research institutions and federal agencies. The Keystone Space Collaborative hopes to strengthen those bonds.

Last year, the group held its first annual conference, which brought more than 250 participants to Pittsburgh, including NASA administrators, the Pennsylvania governor and senators and congressional representatives from the tri-state region. Excitement is already building for this year’s conference, to be held in Pittsburgh on June 1st and 2nd.

“We are catching a wave,” Kasznica said, “and I think, because of the crossover to other sectors that this region is known for, the space industry really has an opportunity here.”

The space economy has gone through “a paradigmatic shift,” she said. “The cost of access to space has decreased by tenfold, thanks, in part, to some of the commercial players like SpaceX, Blue Origin and the like.” This has “created an opportunity in low Earth orbit for commercialization of new technology.”

The environment of low Earth orbit offers a test lab for new technologies, particularly in material science, advanced manufacturing techniques and biotech, said Kasznica. “The in-space development of organoids and other biomaterials, the study of cellular structures as well as new drug development are just a few examples of R&D activities that can benefit from this unique space environment,” said Kasznica. “The anticipated commercialization of low Earth orbit will create a tremendous opportunity that amplifies the industry beyond just the traditional space aspects of it, and this region is well positioned to take advantage of this opportunity.”

Though her focus has widened, Kasznica said that the client that started her on this path, Astrobotic, will play a prominent role in the industry’s future. “I see Astrobotic as a critical linchpin and an anchor for the region,” she said. “It has been a classic emerging technology success story.” She noted the company went from “literally two” employees to a team of more than 200.

She is helping the company create a permanent campus on Pittsburgh’s North Side that will house the larger Keystone Space Innovation Center and AFWERX/SPACEWRX Innovation Hub, which will serve as a focal point for convening and engaging the region’s space and defense innovation technology entrepreneurs.

It will be a space industry hub, Kasznica said, the kind that fosters creative synergy. “Those of us who study the innovation economy know that innovation clusters are born and are best nourished and grown with like-minded adjacent companies working collaboratively together, having those coffee stand conversations and being able to interact with one another. The greatest innovations and growth happens within clustered environments.”

Kasznica shared a vision of the site, which could act as a capitol for the tri-state region’s space economy.

“Crystal ball: 10 years from now, you go down to the North Side, and you sip a space-themed coffee drink while preparing an investment pitch deck, or scheduling on-site business development meetings with various space companies both from Pittsburgh and outside of the region, while your kids are visiting the Moonshot Museum and Carnegie Science Center and learning about how they can someday participate in the new space economy. What I see is a vibrant diverse community built around space and defense innovation.”

To learn more about Babst Calland and its emerging technologies practice, go to www.babstcalland.com.