



CO L O R A D O

**Office of Economic Development
& International Trade**

House Finance Committee
And
House Business, Labor and Economic Workforce Development Committee

Senate Finance Committee
And
Senate Business, Labor and Technology Committee

Advanced Industry Accelerator Grant Program Update
as of
June 30, 2017

Advanced industries (AIs) are key drivers of the U.S. and Colorado economies. Comprising engineering and R&D-intensive companies, they deliver products and services in a wide range of markets, from aerospace to robotics to medical devices. Colorado's AIs include aerospace, advanced manufacturing, bioscience, electronics, energy and natural resources (including cleantech), infrastructure engineering, and technology and information. Together, they account for nearly 30 percent of the state's total wage earnings, around 30 percent of total sales revenue, and almost 35 percent of the state's total exports.

To ensure the progression of this vital aspect of Colorado's economy, the AI Accelerator Program was created in 2013. This initiative promotes growth and sustainability in these industries by driving innovation, commercialization, and public-private partnerships, while also increasing access to early-stage capital and creating a strong infrastructure that enhances the state's capacity to be globally competitive.

OEDIT offers four grants and two global business programs to support AI companies in their various phases of growth. The grants include Proof of Concept, Early-Stage Capital and Retention, Infrastructure Funding, and AI Export. The programs include a network of Global Consultants and export training to build export readiness and help connect Colorado AI companies to global opportunities.

Proof of Concept:

Proof of Concept (POC) grants fund research with commercial applications at Colorado research universities, federal labs located in Colorado, and other Colorado labs with valid technology transfer offices. Funding helps pull technologies from the research institutions where they were discovered and connect them to the private sector where they can be developed into commercialized products. This acceleration of applied research leads to the rapid commercialization of products and services and provides significant economic impact and competitive advantage for Colorado and the Advanced Industries.

Grants support the commercialization of technologies at research institutions at two distinct stages along the commercialization pathway: Pre-Commercial Research (Phase I) and Commercialization Preparation (Phase II). Pre-Commercial Research includes proof of principle studies and other studies on intellectual property and resulting prototypes that demonstrate the utility of a technology for a specific application. Commercialization Preparation includes the process of creating a commercial opportunity assessment for a technology and the development of a commercialization plan.

In Fiscal Year 2017, 42 POC grants were awarded to researchers at Colorado research institutions, bringing cutting-edge technologies closer to market. Over 160 POC grants have been funded since the AI Accelerator Program's inception.

Early Stage Capital and Retention

Early Stage Capital and Retention (ESCR) grants fund companies using technologies developed in proof of concept or other early stage start-ups that have created viable products that meet a market need. Grants support technology commercialization funding product development in preparation for a product launch; or the advancement of a product or technology to achieve a commercial milestone that significantly increases the company's value and stability, and better positions the company for follow-on investment- including SBIR, angel funding or venture capital. The resulting product or service must be manufactured or performed in Colorado.

Grant funding does not compete with existing marketplace funding opportunities, but rather supplements and fills an existing void for capital market's tendency to under-invest in early stage technologies. ESCR grants allow early stage businesses to complete commercial activity such as production, sales and distribution, and business growth. Funds can also be used for business start-up activities, market validation and pre-production prototypes.

Thirty Early Stage Capital and Retention Grants helped Colorado companies further advance in fiscal year 2017. Since the program's inception, 114 Colorado companies have been funded.

The AI Accelerator Program's statute requires an allocation of at least 15% of funds to Proof of Concept grants, 15% of the funds to Early Stage Capital and Retention Grants, and up to 15% of the funds to Commercialization Infrastructure. The table below summarizes all grants awarded in fiscal year 2017.

Status	Program	# of Awards	\$ Awarded	\$ Spent to date	Jobs Created	Jobs Retained	New Co Created	Follow- On Capital	IP	Projected Annual Revenue
	Proof of Concept	42	\$4,031,745	\$3,364,974	17	16	2	750,000	9	N/A
Active Grants	Early Stage Capital and Retention	30	\$5,841,524	\$2,348,487	43.5	93	N/A	\$2,780,513	20	\$6,734,000
	Infrastructure	4	\$4,198,838	\$803,014	7	12	0	\$15,000,000	0	N/A
Totals		76	\$14,072,107	\$6,516,475	67.5	121	2	\$18,530,513	29	\$6,734,000

Approximately \$49,634,804 from the Advanced Industry Fund has been granted since 2013. The chart above shows returns realized during the 2017 grant term and those that continue to accrue as the technologies become closer to and actually enter the market-place. To date, the program successes include the creation of 534 new jobs and approximately 630 jobs retained. Additionally, these funds have helped the technologies acquire an additional \$154,768,999 in grants and investments to commercialize further.

The following two success stories show how the Advanced Industry Grant Program has provided critical gap funding to technologies in early development:

Canvas Technology, Inc., Advanced Manufacturing, Denver, CO

Canvas Technology, Inc. is developing the CANVAS Autonomous Cart, which is a material-handling trolley that relies on computer perception to map its surroundings, navigate, and deliver goods between work cells or between buildings. It is provided as a service along with a web-based dashboard that provides visibility to the materials moved. It is a powerful tool for any manufacturing company to improve transparency of information, reduce forklift-related accidents, reduce necessary batch sizes, speed throughput, reduce quality problems, and reduce inventory levels throughout the factory. Canvas technology received a \$250,000 ESCR Grant for continued product development. Currently, they have a local, operational pilot with Cochlear Americas in Denver, Colorado. They have 5 additional pilot locations in Ohio, California and Arizona. Canvas was able to successfully add 10 additional employees

to their workforce since initiating the grant to add to their current team of 26 employees.

Graham Equipment, Advanced Manufacturing and Electronics, Sterling, Colorado

Graham Equipment located in Sterling, Colorado manufacturers and markets wireless electronic control systems for Agriculture applications. The company received a \$150,000 ESCR grant for product advancement of an Electric Planter Drive system for Original Equipment Manufacturers (OEMs) as well as their branded Electric Planter Drive System. By developing their products for specific OEM customers, Graham expected new revenue streams thus delivering more capital investment and jobs into their rural community.

The company has successfully developed the Electric Planter Drive system and started initial product testing with their clients. Additionally, their product for another OEM will launch commercially in Mexico in November 2017. Sales and exports will commence spring 2018. The partner has committed to 100 units first year (approximately \$100,000 in sales) and 500 units the 2nd year (\$600,000 in sales) of sales activity.

Infrastructure Grants

In order to align private industry and Colorado Research Institutes, Commercialization Infrastructure Grants help fund Advanced Industry projects that substantially build or utilize existing infrastructure to support or enhance the commercialization of Advanced Industry products, assist Advanced Industry start-ups with mentoring or access to outside capital, or contribute to the development of an Advanced Industry workforce.

Infrastructure grants are used to assist in the implementation and execution of action items identified in Advanced Industry Strategic Plans, as developed through the Colorado Blueprint Key Industry Network initiatives. Infrastructure Grants may also be used to assist the implementation of newly identified action items that are needed to accelerate such Advanced Industries.

In addition, infrastructure grants may also be used to leverage federal funding opportunities that address a specific need of an Advanced Industry. Here is an example of Infrastructure funding awards:

SolarTAC, Energy, Natural Resources/Cleantech, Aurora, CO

Solar Technology Acceleration Center (SolarTAC) was awarded \$500,000 to fund the construction and equipment needs of a 74-acre test site near DIA to provide five acres of shared space and new infrastructure for validation and demonstration of advanced renewable energy components in a real-world outdoor test environment. The shared infrastructure allows companies to avoid the expensive and timely process of developing their own test facilities and offers manufacturers of solar and renewable energy products the ability to quickly install, operate, and test advanced inverters, batteries, and other equipment in a plug and play mode.

The project was implemented and managed by the Aurora-based SolarTAC Division of MRIGlobal, a nonprofit research institute headquartered in Kansas City. The facility is fully operational as of September 2017, and is the largest test facility for solar technologies in the United States. It provides a venue for researching, demonstrating, testing, and validating a broad range of solar technologies at the early commercial or near-commercial stage of development.

Unclassified Tools, Applications, and Processing (uTAP) Lab, Aerospace, Gunbarrel, CO

The University of Colorado Boulder, Lockheed Martin, and the United States Air Force (USAF) are working together to create an infrastructure that significantly enhances Colorado's ability to access, interpret, and leverage large satellite-based remote sensing data sets in order to address a variety of civil and commercial business opportunities (e.g. weather, natural resource management, disaster response, agriculture). The infrastructure grant helped fund the creation of a collaborative R&D environment at the (USAF)-owned facility in Gunbarrel.

The USAF is spending over \$20M over the next 2 years to build out a 20,000 square foot space including Unclassified, Classified, and Top Secret Enclaves that will significantly enhance industry collaboration in wide-ranging DoD and Commercial Remote Sensing problem sets. The project has also attracted significant follow-on grants and capital including angel investment, SBIR, and federal grants, totaling \$15,000,000.

Advanced Industry Export Accelerator

The Advanced Industry (AI) Export Grant provides financial assistance for aspiring (new to export) and current (market expansion) Colorado exporters. The grant program supports small and medium-sized AI businesses through funds to offset international business development and marketing costs. Qualified expenditures include:

- translation services for contracts;
- legal fees related to intellectual property protection abroad and compliance/regulatory issues;
- conducting due diligence or credit reviews on potential buyers or distributors;
- travel-related costs for international sales trips and trade shows;
- costs for exhibiting at an international trade show; and
- production and design of international marketing materials.

International business development grants provide expense reimbursements to businesses that are new to exporting or are expanding into new export markets, helping them to grow and accelerate their businesses. OEDIT reimburses up to \$15,000, and Colorado businesses provide a 1:1 match for specific international export development needs.

AI Export grants were awarded to 16 Colorado companies to advance Colorado exporting in fiscal year 2017. Since the program's inception in 2013, 53 Colorado companies have been funded. The table below summarizes all grants awarded in fiscal year 2017.

Status	Program	# of Awards	\$ Awarded	Jobs Created	Jobs Retained	Immediate Export Sales	Projected Export Sales after 1 year
Active Grants	Export Accelerator	16	\$143,164	23	53	\$2,282,153	\$18,552,269

OEDIT tracks companies' export sales, jobs created, and the nature of the jobs created resulting from the AI Export Acceleration Program grants. Return on investment (ROI) for the state is calculated by tracking total actual export sales and dividing this by every dollar the state spends on international

business development grants.¹ As of September 2017, the program had an initial ROI of \$1:\$16. The three success stories below show successful international activity leading to job creation and business growth.

ROCCOR, Aerospace, Longmont, Colorado

Roccor is a technology development and product delivery company operating in the aerospace, defense and medical industries. Roccor received a total of \$23,000 between STEP (2016 grantee) and the AI Export Acceleration Program (2017 grantee). Currently, the company's biggest sales growth area is in the space industry where they provide deployable mechanical systems and thermal control solutions.

The STEP grant enabled Roccor to increase significantly sales and marketing efforts overseas, including making several trips to France, which concluded in June 2016 with the company securing a large, multi-million dollar contract with a major French aerospace firm. With AI Export funding, the company was able to expand its engagement with this customer and identify new international sales leads that may lead to further growth in export sales in the future. This funding was a key enabler in the company growing its export sales to \$4,487,747, and they attribute \$608,000 in export sales directly to the AI Export Acceleration Program.

Because of the increased export sales, the company created 15 new jobs in 2017, growing from 25 at the beginning of 2017 to 40 presently. The types of positions created in association with the AI Export program include quality engineers, production technicians, lab managers, and project managers. The company expects further growth through 2018 to address the needs of this multi-year contract.

Intelligent Imaging Innovations (3i), Bioscience, Denver, CO

3i used AI Export funds to offset the costs of travel to the Asia-Pacific (APAC) countries that they targeted to grow their brand. Globally, the microscopy market that uses their products is projected to double in size over the course of the next five years and the company wanted to create a reseller network in China, Japan, Korea, Singapore and Taiwan. Their work to create a reseller network resulted in \$778,393 in export sales and they have grown their company significantly.

"We have added assets to the Colorado office that include 3 full time employees, 2 contract manufacturing employees, and 2 student interns. I can confidently say that without the support from OEDIT, our business would have been flat and we would not have been able to grow our staff at the unprecedented rate that we realized last year."

Graham Equipment, Advanced Manufacturing and Electronics, Sterling, Colorado

In 2017, Graham Equipment, a company that manufactures and markets a portfolio of wireless control systems for seed planters, was granted an early stage capital and retention grant from the AI Program for product development targeting specific OEMs. The company then had the opportunity to meet with a potential OEM client in Mexico.

The company traveled with a \$1,200 export grant to a town outside of Guadalajara, Mexico to conduct product testing with a potential customer. Through this effort, the company identified modifications to make the product better-suited to the Mexican market. With these modifications, Graham secured the potential customer as their exclusive distributor in Mexico, resulting in \$50,000 in export sales. Graham

¹ The Global Consultant Network expense to OEDIT is not included because these are market-entry services not grants to offset international export activities.

expects export sales to increase to \$450,000 and anticipates adding one new job because of the grant.

Graham Equipment Statement on Rural Impact: "As a small Company whose product is more advanced than our marketing, working with established OEM Manufacturers is a great way for us to grow sales while continuing to build our brand and distribution channels. The majority of these OEM manufacturing opportunities reside outside the US. A single new OEM customer can equate to over \$150,000 of new revenue in the first year and then they can grow to a million-dollar customer by year three. Small dollars of reimbursement from the AI Export Grant can exponentially impact our business. This leads to jobs retained and as we grow, new job creation in our rural economy. We are thankful that the AI committees saw the potential of our business and understood that there are companies beyond the Front Range."