



STRATEGY **1**



Arizona Optics Initiative

Option Year One Annual Report

January 30, 2021

**Small Business Administration (SBA)
Regional Innovation Cluster (RIC) Program
Contract Number 73351019C0003**



Arizona Optics Initiative 2020 Annual Report

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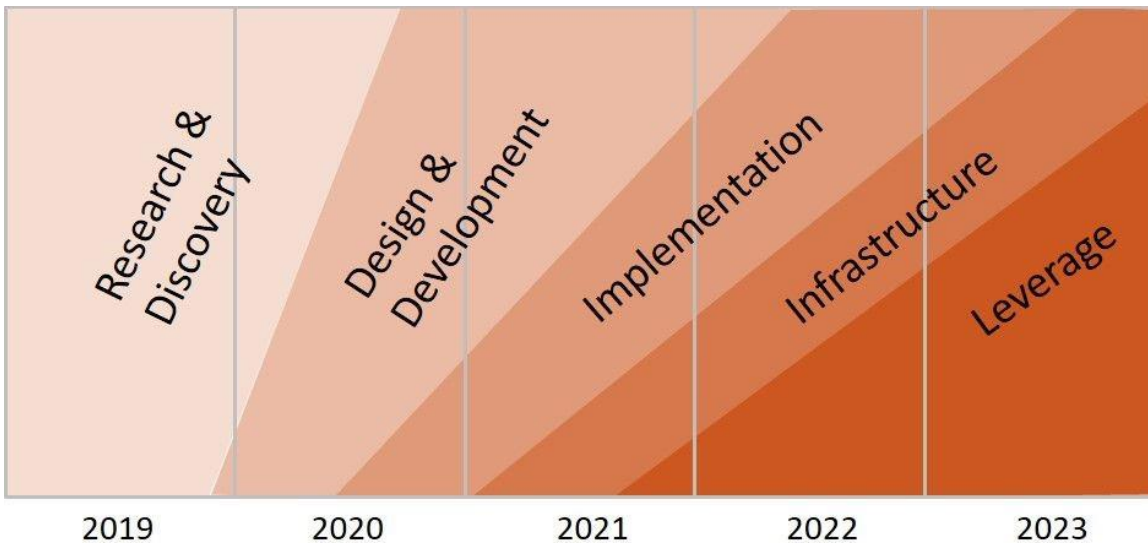
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Introduction

The Arizona Optics Initiative (AOI) is a Small Business Administration (SBA) Regional Innovation Cluster (RIC) program contract award to Strategy1, a Tucson based business consultancy. The objective of the contract is to help grow the Arizona optics industry. The program is open to all Arizona companies that are engaged in optics, photonics, or astronomy, including applications of these technologies.

The contract is funded annually with 2019 as the Base Year, with up to four option years, each with a value of \$500,000. 2020 was Option Year One.

Anchored by the University of Arizona Wyant College of Optical Sciences and Steward Observatory, Arizona is a world class center of optics, photonics, and astronomy. However, that academic prowess has not yet been translated into a robust commercial industry. As shown in the Program Overview below, it is the aim of AOI to change that in a positive way.



Arizona Optics Initiative Program Overview



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It is important to note that the optics industry in Arizona is represented by the industry cluster, Optics Valley, a Committee of the Arizona Technology Council. The AOI team works closely with Optics Valley, and the AOI activities are intended to make Optics Valley the sustainable optics cluster in Arizona.

To accomplish our objectives, AOI has been divided into three separate thrusts:

- Facilitate the scale-up and growth of existing optics companies.
- Promote the formation and development of new entrepreneurial companies.
- Enhance the visibility and community awareness of the Arizona optics industry as a critical enabling technology for the 4th Industrial Revolution.

Overall, the primary activity in the 2019 Base Year was Research and Discovery. The plan for 2020 was to build on that knowledge and begin to Design and Implement programs to support our companies. While we got off to a good start, we were rudely interrupted by COVID-19 in late Q1. Q2 was simply reacting to the constantly changing COVID-19 situation and learning how to operate virtually. During Q3 and Q4 we found our “sea legs” and began to work effectively on the programs outlined in this report. On balance, we are pleased with the progress we made this year and look forward to 2021. A summary of our program resources is shown in Exhibit 1.

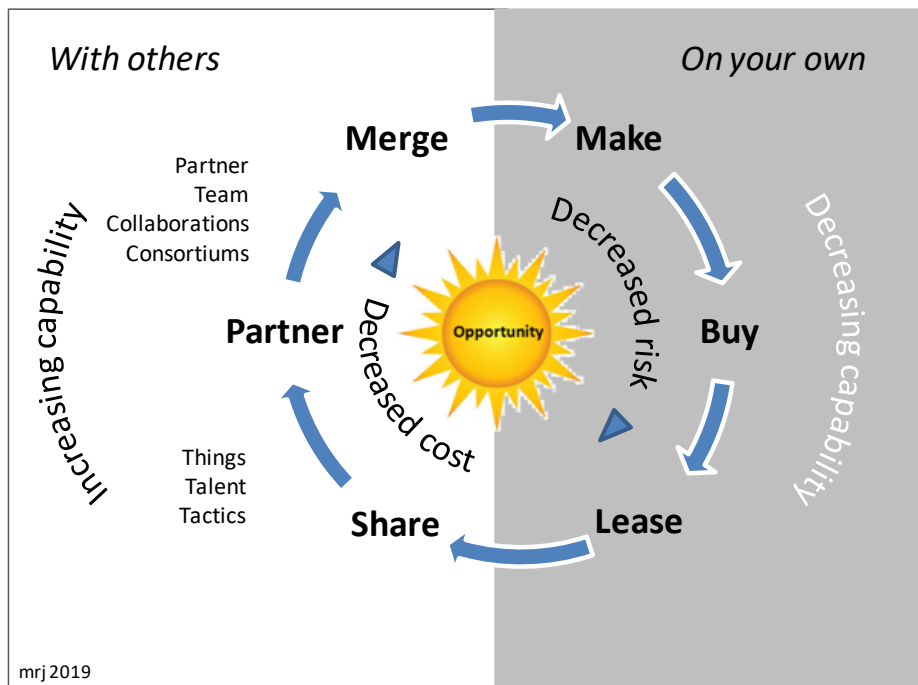
Even though company attraction is not a formal part of AOI, we are pleased to report that three companies have now moved to Tucson, at least in part due to our activities to grow Optics Valley and the Arizona optics industry.

Facilitate the Scale-up of Existing Optics Companies

As a result of our Base Year Research & Discovery, several companies indicated an interest in working better together. Thus, we formed the Growth Initiative in late 2019. This is a group of 12-15 companies (8-10 regulars) that held meetings and workshops throughout 2020. While they began as face-to-face events, they became virtual with the arrival of COVID-19.

As shown in the diagram below, the objective of these meetings has been to build trust among the participants as well as develop the skill to be able to effectively communicate core competencies. They want to achieve the capability to work together to pursue larger business opportunities.

At the end of 2020 the decision was made to expand participation in this growth activity and develop a formal Networking Program, available to all companies. The first of these Networking events was held in January 2021 and was deemed a success by all measures.



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At the end of January, we held our flagship event, the Third Annual Arizona Photonics Days. This year it was again hosted by the University of Arizona BIO5 Institute and held at their facility on campus. Registration this year was 160, up from 100 last year. As shown in the photos below, the technical presentations were well attended, and as always, there was plenty of time for active networking.



Arizona Photonics Days

Immediately following Arizona Photonics Days, we hosted the Optics Valley Pavilion at Photonics West, a leading industry conference and trade show annually attended by about 20,000, with 1,500 exhibitors. We had almost 20 companies in our pavilion this year, and traffic was very active, as shown in the photo below. For the second year, Optics Valley hosted a fun ice cream social on Wednesday afternoon, co-hosted by the Arizona Commerce Authority.



Optics Valley Pavilion at Photonics West

One thing that was evident at Photonics West this year was the absence of any exhibiting companies from China, and the attendance from Asia overall was clearly down. COVID-19 was upon us.

During Q2, our primary activities were three virtual web meetings to help our companies cope with the COVID-19 situation. These were delivered by Farhang & Medcoff, a local law firm.



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During Q3 and Q4 we increased our activity and introduced three new programs to help support our member's growth:

- We formed a Supply Chain working group to help our members improve their manufacturing capability by sharing information about supplier capability.
- We began publication of the Optics Valley FOCUS, a biweekly newsletter. The content includes articles of local and/or industry interest, as well as upcoming events of interest to our members. In the future we plan to expand it to include company stories and potentially a job board.
- We introduced monthly Tech Series webinars. These are single company presentations about technical capabilities, or unique expertise; they are not marketing presentations. We hold these events at 8:00 in the morning, so that they can also be attended by our international colleagues from the Global Photonics Alliance. These are being very well received with almost 50 attendees for each one.

It is important to note that all three of these programs have been developed in direct response to company requests we learned from our Base Year Research & Discovery. It is also important to note that the Supply Chain and Tech series programs, as well as the Networking, mentioned above, are all led by company volunteers. That is the beginning of the community collaboration we have been striving to achieve.

One other program that we are continuing to develop is the on-line Company Directory. We had hoped to roll that out in 2020 but had a couple of hiccups along the way. Programming is now complete, and we are finishing documentation, so the Company Directory will come on-line in early 2021.

Raytheon is a major defense contractor with lots of optics needs. We have been working to improve the Optics Valley relationship with Raytheon for several years. In 2020 that effort began to come to fruition. They supplied us a list of future optics technology needs, to which we responded. They have now responded to our response, and we have an ongoing dialog. We are hopeful that we will translate conversation to real business in 2021.

Workforce Development continues to be an important part of our activity. In 2020 we formed a company advisory committee to help guide Pima Community College (PCC) as they revamp their optics technology curriculum. In addition to PCC, we are also working with the Pima Joint Technical Education District (JTED). JTED will include an optics program when they occupy their new building, as soon as COVID-19 allows.

Finally, our direct coaching and mentoring continues. In 2020 we worked with five different companies.

Promote the Formation and Development of New Entrepreneurial Optics Companies

Our entrepreneurial activity in 2020 centered in two ongoing areas. The first is the need for entrepreneurial business acumen. In our Base Year Research & Discovery process, it became very clear that while there is a plethora of optical inventions coming from the UArizona Wyant College of Optical Sciences, there is a dearth of business knowledge to commercialize and manage them.

In this regard, we held multiple discussions with the UArizona organizations charged with commercializing technology. These included Arizona Forge, Tech Launch Arizona (TLA) and University of Arizona Center for Innovation (UACI). They all agree that the lack of business acumen is **THE** major problem they face in their efforts to commercialize technology.

In cooperation with TLA, we then began discussions with the Eller College of Management. Eller also agrees that it is a problem, and further that they should be the one to resolve it. Since this need does not fit neatly into any of their existing offerings, the Eller Executive Program has agreed to take the lead and design a program. They have been coordinating with other UArizona units, and as of this writing, we are waiting momentarily for their initial proposal.

The second entrepreneurial area where we have been working is around SBIR/STTR response. We have been doing direct coaching and mentoring with several companies to help them improve the commercialization section of their proposals and working with them to execute on the commercialization requirements once they win the award.

Related to that, one of our AOI Associates has developed a company assessment to measure how prepared a company is to execute on a SBIR opportunity. In addition, it also gives guidance on how to improve weak areas. We have begun working with this assessment on an alpha basis and look forward to enhancing it to a full program in 2021.

Enhance the Visibility and Community Awareness of the Arizona Optics Industry

It goes without saying that COVID-19 brought all marketing and event activity to a complete standstill. In cooperation with the UArizona Flandrau Planetarium, we had planned a family day to celebrate the International Day of Light (IDL) on May 16th. Since face-to-face events were banned, that event was cancelled. We are now planning a virtual IDL event for May 16th 2021.

Another important community event for Tucson is TENWEST, a week-long celebration of arts, society and technology, especially entrepreneurial companies. In 2019, Optics Valley was the lunch sponsor for the Technology Day. TENWEST was cancelled in 2020 and will next be held in April 2022. In its place there will be a one-day virtual IdeaFunding event in April 2021. Optics Valley will be a sponsor for that event.

One event that did take place as scheduled, although in an altered virtual form, was the Arizona Technology Council Southern Arizona Tech + Business Expo. Optics Valley was a Silver Sponsor and also sponsored an Innovation Presentation on Quantum Information Science.

The Tech + Biz Expo was conducted on Virbella, a new software platform for virtual events. Each attendee created their own avatar to enable them to move through the event. The venues included a “Beach” for virtual networking, an “Auditorium” for awards and presentations, and finally the virtual “Exhibition Hall.” The Optics Valley exhibition booth is shown in the figure below.



Exhibit 1 – Program Support

Arizona Optics Initiative (AOI) Program Partners

Formal in Proposal

Key Contact(s)

- Arizona Technology Council Steve Zylstra, CEO
- Pima Community College Ian Roark, VP; Greg Wilson, Dean
- UArizona Tech Launch Doug Hockstad, AVP
- UArizona Tech Parks Carol Stewart, AVP; Eric Smith, Exec Dir

Informal

- Wyant College of Optical Sciences Tom Koch, Dean
- Arizona Commerce Authority Krista McGarvey, VP
- City of Tucson Barbra Coffee, Director Economic Initiatives
- Pima County John Moffatt, Exec Dir; P. Kavanaugh, Dir
- Startup Tucson Liz Pocock, CEO
- Pima JTED Kathy Prather, Superintendent
- And many more...

Srtategy1 AOI Team

Focus/Expertise

- John Dennis Program Manager
- Mary Breeding Administration and Support
- Mark Jepperson Entrepreneurial Ecosystem/Building Change
- Peter Mantas Mentoring Entrepreneurial Companies
- Don Orton Growing Companies
- Jack Schumann Optics Industry
- Sonia Vohnout Federal Funding