

The Big Small: What Makes Startups Important



Startups are the future of business. They are small companies that have lofty ideas and are more innovative than large corporations. Startups seem to move in the opposite direction of other companies during recessions. Startups provide a lot of jobs as well as new products and services that help grow our economy. Startups create new market or completely transform old ones by introducing ideas that can change the world.

We were all pleased to hear the recent announcement of the autonomous driving technology company, [Pony.ai](#), would be one of the latest startups coming to Tucson.

James Peng, Pony.ai's co-founder and CEO had this to say, "Tucson is quickly becoming a leading city for tech startups and smart city technology, and Pony.ai is excited to expand our operations there."

This made me think. Startups are essential because they break molds, fix problems, and empower individuals to build a better future. They provide us with fresh innovations and services.

Startups shape business trends. Startups create jobs,

innovative ideas, and initiate growth of the economy. We must support these companies and be one ourselves, if possible, to create a better future for everyone!

How Do Startups Shape Trends?

The world's most successful entrepreneurs have created companies that are now household names. Instagram, Airbnb, and Uber all began their [success stories as tech startups](#). The success of these businesses has had a tremendous impact on the economy, providing jobs for people all over the world.

Startups are essential to the economy. They are young, bold companies that have unique ideas for product development. And in so doing, these companies provide their employees with opportunities for growth and career advancement.

Here are seven ways startups shape trends:

1. At this moment, there are an estimated 450,000 startups in the U.S. alone. The one thing they all have in common? They are working to fix problems. As customers, we

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Tucson is home to an exciting entrepreneurial ecosystem that enables startups and ideas to launch and thrive. Thanks to the efforts of our academic network across the University of Arizona, such as Center for Innovation and Tech Launch Arizona, along with groups like StartUp Tucson and others, the Tucson Entrepreneurial Ecosystem is alive and well.

As we were putting this issue of Trend report together, IdeaFunding was celebrating its 25th year as Southern Arizona's largest and longest entrepreneurial conference and pitch competition. Where early-startup companies from all over Arizona come to participate by pitching their ideas, and this year compete for over \$50,000 in prize money. The public is invited to watch the finalists' pitch on November 3rd. For more information and to purchase tickets to attend TENWEST and IdeaFunding [visit their site](#).

We have compiled and highlighted over 200 startups and new businesses in this issue. These are the trends to watch.

All startups, by their very nature start out being small businesses, but not all small businesses are startups. The difference with startups is that it's their goal to no longer be a startup at some point, while many small business owners are more than happy for their small businesses to remain small.

We thank **Michael Rossmann** for his introduction explaining why startups are important. They are the BIG SMALL to our economy indeed!

The amazing thing I learned about the term "startup" is that it really has no defined boundaries. In fact, I'm not sure there are many boxes that you can lump startups into. Founders come in all ages and backgrounds, while companies can still be considered startups for quite awhile after founding with no hard or fast rules as to when they stop being a startup. They only stop when they stop innovating.

We'd like to thank our startup contributors who were willing to give their time to help us understand their businesses. **Emil Tremblay** of Ambr Grading; **Andy Griffis** and **Sonny Cray** of Delta Thermal; **Richard Austin** of Reglagene; and **Martin Fuchs** of Metfora.

Thank you to **Kameron Norwood** and **Dave DiCosola** of PackDash; **Terje Skotheim** of Lightsense Technology; **Angel Herrera** and **Ryan Smith** of Zendoor; **Collin Taylor** of Revolute Robotics; and **Cherie Koester** of ERX.

And thanks to **Kuldip Verma** of Vermaland

and **Anita Verma-Lalian** of Arizona Land Consulting, as well as **Tony Mangat** of Mangat Group for reminding us that innovative startups also exist in the real estate industry and fill some gaps in that market.

I have found a common thread connecting all startups, though: a passion to disrupt, change or enhance the traditional mindset of whatever industry they are in.

Thanks also to **Jessa Turner** of UA Center for Innovation, for her help and making us aware of the fact that there are 77 Startups associated with UACI.

As **Paul Tumarkin** of Tech Launch Arizona (TLA) states, "the University of Arizona is a powerhouse of research and innovation" and ranked 28 of the top 100 worldwide universities for the most U.S. patents granted for inventions in 2021. This is where TLA comes in, to bring those patents to market. The numbers speak to their success: \$1.6 billion in economic activity over the past five years, 2,500 jobs and \$561 million in labor income. With triple the startups now, since they began. Our congratulations to Tech Launch for ten years of innovation and commercialization being celebrated this month.

For our purposes though, it does not have to be tech. Private Investors shouldn't narrow their criteria to tech alone. As you can see, the definition of a startup is broad. But, while there are a lot of factors that go into the definition of a startup, we are going to leave you with these words from Apple founder, Steve Jobs worth considering:

"You've got to have an idea, or a problem, or a wrong to right that you're passionate about, otherwise you're not going to have the perseverance to stick it through."

Special thanks to all our contributors and our *Trend report* team: Patti van Leer, Michael Rossmann, Melissa Vucijevic and Jack Paddock for making this issue possible. We start work right away on a remarkable **December issue** that will feature **2023 Predictions** from experts.

And thank you to our readers for your continued support. As always, we appreciate your feedback and welcome your comments.

Karen Schutte
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“Startups are essential to the economy. They are young, bold companies that have unique ideas for product development. And in so doing, these companies provide their employees with opportunities for growth and career advancement.”

want products tailored to meet our specific needs, and we as customers should be demanding these innovations because it is what will continue to drive economic growth. Problems need solving!

2. Startups seem to move in the opposite direction during recessions—by having more startups during downturns, the rate of unemployment does not rise as much as it would otherwise. Besides, it is a fascinating phenomenon to watch entrepreneurs turn passion into profit and growth.
3. Startups lead to industrial growth—an increase in startups means an increase in new jobs to support them by hiring more employees as they grow.
4. Consumers get more options to choose from with startups, which also enhances competition in related industries. Competition leads to lower prices for consumers and an improved product for everyone.
5. Technology startups help other businesses succeed by enabling them to scale quicker when they otherwise would not without turning off their cash flow.
6. Startups are important to the economy because they evolve into successful businesses which employ many people across distinct types of industries, making it crucial for development on a national scale by promoting growth of progress past what was already achieved before the startup existed.
7. Startups create ground-breaking innovations which help eliminate problems at other companies, meaning they may save people’s time and help them accomplish tasks more effectively, leading to increased productivity and profits across industries.

Startups are essential to the economy, offering many opportunities. Startups need funding, but there is no shortage of investors looking to get in on the ground floor of an opportunity! With all these factors combined, it is easy to see why startups are such an integral part of economic growth.

Silicon Valley, the San Francisco–San Jose–Oakland area might always be the epicenter in the technology universe, but it will no longer be the universe itself. Technology companies that understood this

	Market	Total Tech Employment (2021)	Total Tech Growth (5 years)
1	London, ON	13,700	99%
2	Stamford	15,060	50%
3	Des Moines	18,690	37%
4	Winnipeg, MB	19,900	36%
5	Tucson	15,940	28%
6	Dayton	18,460	23%
7	Honolulu	12,200	18%
8	Boise	12,370	18%
9	Huntsville	22,510	15%
10	Palm Bay	14,310	13%
11	Las Vegas	18,100	11%
12	Colorado Springs	18,670	10%
13	Oklahoma City	21,520	10%
14	Omaha	22,670	9%
15	Louisville	16,960	9%
16	Charleston	12,390	7%
17	Albuquerque	13,910	7%

and harnessed the power of distributed workforces years ago are in a stronger position than their competition when it comes to leveraging today’s California exodus. The good news is emerging leaders can still enjoy this bountiful approach to business-building. So long as they keep human interaction central to their approach, the world will remain their oyster.

Both veteran and emerging technology companies are choosing Tucson as their home in recent years. Tucson has developed an infrastructure to support a wide range of operational necessities for startups.

Commercial real estate firm CBRE in its [Scoring Tech Talent 2022 report](#), highlights Tucson in the “The Next 25 Markets” where tech companies are seeking operational opportunities. Over the past five years, Tech jobs have risen by 28%, ranking our city fifth of the top Next 25 Markets for total tech employment growth.

Michael Rossmann has a passion for entrepreneurship and has been involved with numerous startups spanning diverse industries ranging from biochemical and biomedical disciplines to commercial and industrial electronics to real estate information services. Currently, Michael is a manager and co-founder of the Real Estate Daily News and RED Comps, based in Tucson. Michael can be reached at REDailyNews@outlook.com.





Some Background

[Ambr Grading](#) specializes in authenticating, grading, and encasing (aka "slabbing") collectible Trading Card Games (TCGs) such as Pokémon, Magic: The Gathering and more. Our company is the only in the industry to specialize in TCGs and has developed unique cases and grading methods to better serve TCG collectors. Customers send in their cards to Ambr Grading for this service: the final product is a graded card slabbed in a beautiful custom case that is designed to enhance the aesthetics of the card, while displaying the condition of the card (the grade) in a case that will preserve it for years to come.

The collectibles market has boomed over the last decade and has demonstrated steady growth and stability over the last few years. Grading companies have been flooded with orders from collectors seeking to have their collectible cards graded and encased. Many grading companies have experienced back-logs extending out past a year, product quality has declined as a result, and card grades have become increasingly inconsistent. Sports-card grading has traditionally been the bulk of the market, with TCGs rapidly gaining popularity. Additionally, most of the established grading companies are only responding in a traditional fashion as a way to meet demand, and not adding new innovations nor technology to their process.

As a result, almost every grading company is a sports-card grading company that also grades TCGs. This results in TCGs often being mis-labeled and improperly graded, and then placed in a case that was designed for sports-cards and not TCGs. In 2021 revenue of the collectible grading market reached approximately \$1.2 billion (up from \$400 million in 2018). PSA Grading is the largest company in the market (30% share) with annual sales in 2021 estimated at

\$360m. Other notable companies include BGS, SGC, and HGA with an estimated combined market share of 30-40%. Within PSA, approximately 30% of revenue is generated from TCGs and these ratios are consistent across most grading companies. In June 2022 PSA graded approximately 300,000 TCG cards alone. With TCGs now representing 30% of the grading market, TCG sales in 2021 are estimated at \$360m.

Design and Production of Unique Slab and More

First, Ambr Grading has designed and produced a unique case (slab) that is built specifically for TCGs. The case is fully customizable allowing the customer to select the graphic design to match their cards - resulting in a slab that aesthetically enhances the card unlike any other on the market. Second, Ambr Grading has developed a complete grading and processing system that produces a more accurate and consistent grade tailored for TCGs. Furthermore, Ambr Grading has deployed innovative technology to give the customer digital reports,

provide order transparency, and avoid many of the pain points that existing companies are facing.

Within one year, Ambr Grading developed and produced a product that is now on the market and sold to the public. This includes the physical product, the initial software stack (developed in-house), and the tooling, equipment, and facilities needed for production. Immediate needs now focus on marketing/sales and software development. While Ambr Grading has demonstrated early

traction, it is focusing hard on the marketing & sales front to gain wide-spread brand awareness and generate more sales. The initial software stack has allowed AG to produce product and accept orders via its website, but a very large number of features still need to be implemented.



Emil Tremblay celebrating ribbon-cutting ceremony with Liz Pocock of Startup Tucson and Former Mayor Jonathan Rothschild (credit: Arizona Daily Star)

Emil Tremblay is the CEO/CTO of Ambr Grading. He is the team lead, lead software developer and sets the company vision. Emil has extensive experience in the tech startup world. At Ambr Grading he designed and built the cloud-based software stack and leads strategic planning. He has been the principal investigator (PI) for Phase I and Phase II National Science Foundation (NSF) grants and has been the lead on raising venture capital for multiple ventures. Additionally, he has direct experience with anti-counterfeiting and tamper detection technologies, data protection methods, and system engineering. Emil can be contacted at Emil@ambrgrading.com.



Our Background

Delta Thermal, Inc. is a new startup, Tucson-based business, founded by two Tucsonans, Andy Griffis and Cloud “Sonny” Cray. They have developed thermal imaging technology designed to stabilize the power grid, save lives and increase the profitability of companies that Americans and Arizonans work for and with.

The world’s infrastructure—power grids, mines, hospitals, stadiums, anywhere using big power tools—operates on switch gear technology. Switch gear technology is used to both de-energize equipment to allow work to be performed and also clear faults downstream. When switches fail, the collateral damage can be catastrophic. Every year switchgear arc flash events cause 2,600 explosions, 7,000 burn injuries, 400 deaths and significant down time. These time bombs cost companies an estimated \$1+ billion in annual medical and parts expenses and \$6+ billion in annual operational expenses.

Our vision and strategy at Delta Thermal is to make increasingly compelling offers to industry by scaling our technology across the market while simultaneously reducing its cost of ownership; in other words—we aim to make it easy for the customer to assess that “it’d be stupid not to do this.”

The Present

Delta Thermal offers Industrial Internet of Things (IIoT) heat imaging solutions for industrial equipment that prevent failures and downtime. We provide a hardware and software solution that monitors the temperature of industrial equipment using continuous thermal imaging to prevent these failures and downtime.

We automate the current standard practice for protecting and maintaining switchgear, which is to send a guy into a dangerous place with a handheld thermal gun and grab some data... every once in a while. Automation allows us to get “enough” data to know what’s going on and to do so without endangering anyone’s life.

Delta Thermal helps companies avoid that threat by continuously monitoring equipment using Mosaic, our patented IOT thermal imaging module, small enough to slip into a switch gear cabinet. Our cloud-based Thermal Safe software analyzes thermal data and automates systems to prevent catastrophic events. Our existing customers are some of the biggest energy producers and mining companies in the world, and we’ve already saved them millions.

We are gaining industry wide recognition, getting repeat orders from the large industrial companies, and integrating into the world’s largest switchgear providers.

The Future

Growing fast and well is probably our main concern. We want

to keep our balance as we grow and minimize gaps that can occur from growing too rapidly. We are selling our first-generation product today and ramping up production while continuing to deepen the scalability and applicability of the product.

Our team includes backgrounds in defense technology business, software/hardware engineering, national sales and marketing, international finance and electricity transmission and distribution.

“Growing fast and well is probably our main concern —we want to keep our balance as we grow and minimize gaps that can occur from growing too rapidly.”

We have been working with infrared imaging devices for over a decade, from both an engineering and business perspective. When we were first asked to solve a problem for one of our earlier customers, our solution turned out to be a market opportunity to grow into. So, we invested, knowing that this would help companies improve their bottom line, protect their employees and contribute to the stability and longevity of the US Electrical Grid and US Industry generally—we are most excited about the help we can offer companies that will improve their lives and businesses, many of whom have sites right here in AZ.

These early customers, all large national and multi-national companies, report to us that they are greatly helped by our product and see many additional opportunities in their businesses. Consequently, Delta Thermal is successfully pursuing a seed round capitalization to support the next 12 months of growth.

The estimated total US market for our first vertical exceeds \$20 billion USD.

The best advice I have to share with anyone going into business is advice I received from Rudy Gustafson, my very first employer. Rudy told me: “If you *have* to make a choice between making a buck and making a friend...make a friend.” ~ Words to live by.

Co-founders Andy Griffis, Ph. D., and Cloud “Sonny” Cray identified a critical need to keep people safe in the energy transmission & distribution industry. Leveraging their experience in remote sensing and surveillance, camera technology, real estate development, and military security, the founders’ innovative ThermalSafe software helps teams efficiently monitor thermal data and pre-empt potential problems. Contact Andy at Andy@deltathermalinc.com.





Innovations in Brain Cancer Treatments Have Lagged

Great strides have been made in treating cancer. But innovations that are effective for the treatment of brain tumors have been lagging. The standard of care therapy for glioblastoma was approved by the FDA in 1999 and affords patients an average of 2.5 months of additional survival with the trade-off of severe side effects. The number one reason new therapies for brain cancer fail is the difficulty of passing therapies into the brain. Each of us has a filter known as the “blood-barrier” which prevents toxins from entering the brain. The problem is this filter also prevents the entry of what would otherwise be effective therapies.

Reglagene utilized well validated principles for the creation of brain penetrant therapies to design, manufacture, and test over 800 prototypes. We identified an orally administered, safe, potent, brain penetrant cancer medicine. This therapy works by targeting a protein known as tubulin, the number one clinically validated target in the history of cancer therapy. For decades, pharmaceutical scientists have worked to create safe and effective tubulin-targeting therapies that penetrate the brain. Reglagene’s achievement of this goal sets them apart. The R&D efforts resulted in new discoveries that are now patented and fully owned by Reglagene. Reglagene’s tubulin-targeting therapy is distinguished by its safety profile and brain penetration. Unlike the marketed tubulin therapies, Reglagene’s therapy is safer and may be dosed daily instead of weekly like the rest of the field. It is given orally instead of by intravenous infusion, and, most of all, passes into the brain.

There are two other companies with once daily, orally administered tubulin therapies in human clinical trials. However, these therapies are unable to access the brain. PTC Therapeutics and Veru Pharma have achieved clinical success with their therapies with cancers outside the brain. Their success bodes well for Reglagene’s therapy inside the brain.

One Million Patients Diagnosed with Brain Cancer Every Year

There are about one million brain cancer diagnoses in the world every year. For most patients, a brain cancer diagnosis is the beginning of the end with average life expectancy post-diagnosis less than one year. Reglagene is taking a two-pronged approach to addressing the market need this market. Breast, lung, and melanoma are the cancers that most frequently metastasize into the brain. These diagnoses make up about two-thirds of global brain cancer cases. Once the cancer spreads to these patients’ brains, they live on average an additional 6 months.

The second segment is patients diagnosed with a high-grade glioma. High-grade glioma includes glioblastoma, the same brain cancer that rapidly took the lives of Senators John McCain and Ted Kennedy and President Biden’s son, Beau. High-grade glioma patients

have a primary brain cancer without any significantly effective, safe, or convenient therapies. High grade glioma is classified as a rare disease with about 36,000 new diagnoses annually.

Breakthrough Product and Delivery

Reglagene aims to reach patients as quickly as possible utilizing the FDA accelerated drug development and approval programs to reduce timelines and cost. Brain cancer patients will no longer choose between palliative care and toxic medicines that barely extend their lives.

Innovative cancer therapies command a premium in the marketplace. The average annual cash price for recently launched orally administered brain cancer therapies is \$144,000 per year in the United States. With modest market penetration estimates on the order of 10%, and accounting for sales outside the U.S. market, we anticipate an average selling price of \$100,000 per year with a total market opportunity of \$7B.

The biggest challenge the business faces today is securing the capital needed to complete the testing necessary to file an Investigational New Drug (IND) application with the FDA to move into human clinical trials. An FDA cleared IND is a requirement for initiating human testing. Reglagene is a “pre-revenue” business that builds corporate value by developing pharmaceutical products of high potential. Our objective is to sell these products to pharmaceutical partners before they reach the market.

Reglagene’s CEO, Richard Austin PhD, MBA, is a pharmaceutical R&D veteran with over 25 years of experience ranging from the laboratory bench to operations management at well-known pharmaceutical companies (GlaxoSmithKline and Sanofi). His expertise in drug therapy discovery and development and operations management makes him the ideal CEO for a startup biotech therapeutics company.

My secret sauce is hiring talented people, motivating them, and allowing them space to creatively move the business forward. A “lone genius” leadership model is destined for failure in a business as complex as the development of new therapies. The lone genius model also leaves untapped the creative potential of each team member. At Reglagene, each team member understands their objectives and have a high level of autonomy in how objectives are achieved. This way of working is not a “blank check” but is subject to the always changing status of the business. To keep all the parts aligned requires regular dialog on objectives, progress, plans, and a building of a sense of trust, value, and camaraderie throughout the entire team.

Motivating me to start this business is the joy of building and leading. My life’s mountain-top experiences have been about doing the work to bring people together to accomplish feats collectively that were beyond their reaches individually. Richard can be contacted at austin@reglagene.com.





Clinical Diagnostics

Clinical diagnostics is very challenging from a business perspective with long development cycles and protracted adoption but there is tremendous scope for major impact due to significant unmet needs in clinical practice. Moreover, those in the industry find it highly motivating to work with the dedicated professionals in healthcare to develop solutions to the challenges they face every day.

“45% of the American population suffers from at least one chronic disease.”



Metfora

To make diagnostics more effective, [Metfora](#) is taking a novel approach to detecting disease. Their focus is on metabolites, small molecules produced by the cellular machinery, in order to enable early-stage disease detection. This allows the physician to make a timely intervention and allows patients to get the treatment they need when it will be most effective.

Chronic Diseases on the Rise

This is important because, according to a recent study, 45% of the American population suffers from at least one chronic disease. The at-risk population for chronic diseases (people 40+) is about 150M people. Many of the affected people are undiagnosed, misdiagnosed or diagnosed only late in the progression of their disease. They frequently present with nonspecific symptoms like fatigue or shortness of breath, making diagnosis difficult and, as a result, they often make multiple visits to their doctor over periods of months or years. During this long diagnostic interval, the disease goes untreated and can progress to a more advanced stage that is less sensitive to the available therapies.

AI-Enabled Approach for Detecting Chronic Diseases

Metfora's novel AI-enabled approach overcomes the difficulty of detecting chronic diseases by discerning disease-specific changes in the levels of circulating metabolites. These can be measured in blood using mass spectrometry. This is combined with machine learning, popularly known as AI, to discern disease-specific metabolite

patterns, akin to “disease fingerprints,” in the data. Finding such disease fingerprints in a patient's blood allows the presence of the disease to be predicted with very high confidence.

The technology has been licensed from the University of Arizona. The initial focus is on a panel of four lung diseases (COPD, pulmonary fibrosis, pulmonary hypertension, and asthma) that will form the first commercial embodiment of the technology. Metfora has obtained grant funding to drive progress and is now seeking investor financing to bring the test to market.

Martin Fuchs, Chief Executive Officer, brings more than 40 years of industry experience. He has held senior product development roles in diagnostics, most recently in clinical microbiology at Accelerate Diagnostics. He is the cofounder of three companies including Metfora, CellPoint Diagnostics and Active Impulse Systems. He began his career at Waters, a world leader in bioanalytical instrumentation and holds two Engineering degrees from Massachusetts Institute of Technology (MIT). He is an inventor on more than 30 issued US patents. Martin can be contacted at martin.fuchs@metfora.com.



Mission Tierra Apartments (220 Units) Sells for \$38 Million

Located close to I-19, downtown and the Tucson airport, Mission Tierra Apartments at 5505 S Mission Road has 220-units consisting of 96 one-bedrooms in two floor plans: 574-square-foot and 587-square feet; 96 two bedrooms with two floor plans: 844-square-foot and 860-square-feet, and 28 double level townhomes with four bedrooms each at 1,312-square-feet, an aggregate of 15 buildings plus clubhouse and laundry bldg. Amenities include spa, pool, picnic area, gated community, and dogs and cats allowed with a monthly fee. Prior sale recorded on 5/2019 for \$15.05 million was reported as a recapitalization of property with new partners brought in and not an arms-length transaction. Seller recapped five properties at that time. 9/23/2022

Sale:

\$38,000,000
\$172,727/unit

Size:

220 units

Buyer: Mission Tierra Owner, LLC an affiliate of Element Property Company (Los Angeles, CA) c/o Michael Silberman, Principal

Seller: Blackstone Company affiliate BRE-Peak MF Mission Tierra AZ, LLC (Chicago, IL) c/o Piero Bassani, principal; CBRE (Tucson) Jeffrey Casper and Asher Gunter, Matt Pesch, Sean Cunningham, and Austin Groer (Phoenix)

Commons on Stella Apartment Homes (199 Units) Sold for \$37 Million

Commons on Stella Apartment Homes at 6534 E Stella Road consists of 24 one story buildings totaling 185,277 square feet (\$205.20 PSF). The community is comprised of 199 units ranging from 745-square-foot 1BR/1BA to 1,045-square-foot 3BR/1BA apartments. Situated on 19.18 acres and Section 8 is accepted. Completed in 1964, Commons on Stella Apartment Homes is constructed of concrete block with flat roofs and features an attractive unit mix consisting of 30 one-bedroom / one-bathroom units, 109 two-bedroom / one-bathroom units, and 60 three-bedroom / one-bathroom units. Each unit is individually metered for electricity and gas with individual hot water heaters. Unit interiors feature air conditioning / heating, a full-size washer / dryer, hardwood floors, a private enclosed backyard, oversized closets, and kitchens equipped with a refrigerator, microwave (select units), and dishwasher (select units). The community also provides its residents with a swimming pool, splash pool, business center, clubhouse, children's play area, picnic area with barbecues, and assigned parking. Additionally, portions of the land can be allocated for future development of additional units or amenities. Significant employers in proximity to the property include Davis-Monthan Air Force Base, Carondelet St. Joseph's Hospital, and Raytheon. Property last sold 1/20/2017 for \$7,540,000. 9/1/2022

Sale:

\$37,000,000
\$185,929/unit

Size:

199 units

Buyer: Icon on Stella, LLC an affiliate of Break of Day Capital (Manhattan Beach, CA) c/o Gary Lipsky; ABI Multifamily (Phoenix) Alon Shnitzer, Rue Bax, Eddie Chang, and Doug Lazovick and Tucson Apartment Team—Desiree Palmer and Ryan Kippes

Seller: TWG Sherwood, LLC (Chicago, IL) c/o Dale Scheck; ABI Multifamily (Phoenix) Alon Shnitzer, Rue Bax, Eddie Chang, and Doug Lazovick and Tucson Apartment Team—Desiree Palmer and Ryan Kippes

Pima Medical Institute Building 1 Sold in Sale Leaseback for \$23 Million

The Pima Medical Institute building at 2121 N Craycroft Road sold in a sale leaseback to a California REIT. The 74,815 square-foot building (built 1985) on the 8.6-acre Pima Medical Campus, was fully occupied by Pima Medical Institute who will remain in the building as a tenant. 9/19/2022

Sale:

\$22,965,040
\$306.96/SF

Buyer: Realty Income Properties 27, LLC, and affiliate of Realty Income Corporation REIT (San Diego, CA) c/o Larry Chapman, Director

Seller: An affiliate of Pima Medical Institute, Vocational Training Institutes, Inc. (Tucson) c/o Richard Almeroth

Size:

74,815 SF

Shamrock Foods Warehouse/Distribution Site Purchased for \$18.2 Million

The property at I-10 & Tangerine Road in Marana is block patted as Block 6, a portion of Crossroads at Gladden. The buyer purchased for construction of a cold storage / warehouse/ distribution facility to be owner occupied by Shamrock Farms. Crown West Land Group of Tucson, the seller purchased 288 acres known as Crossroads at Gladden, adjacent to its successful master planned community, Gladden Farms. Amazon had considered this site for a distribution center before choosing Silverbell and Ina where they are under construction. Its location is a natural for logistics with easy access to I-10 for El Paso going east, Mexico going south and Phoenix both only an hour and a half away. 9/2/2022

Sale:

\$18,153,630
\$5.15/SF

Size:

81 acres

Buyer: CKD Flagstaff, LLC an affiliate of Shamrock Foods Company (Phoenix) c/o W Kent McClelland, CEO; CBRE (Tucson) Tim Healy

Seller: Fidelity National Trust #60,528, Crown West Land Group (Tucson) c/o Dean Wingert, Regional President

Iconic Lodge on The Desert Resort: 102 units Sold for \$16 Million

Atira Hotels has added the Lodge on the Desert Resort at 306 N Alvernon Way in Tucson to its hospitality portfolio. Atira Hotels is one of the hotel industry's top hotel management, hotel investment and hotel development companies based out of Chicago, Illinois. The principals have been involved in the development and operation of hotels from over twenty franchise brands in ten states across the United States and have managed and asset managed hotel properties across the United States and Canada. This is Atira's first property in Tucson. Lodge on the Desert was built in 1937 has only had three owners since it built. The seller purchased it out of bankruptcy six year ago and brought it back to life with \$3 million in improvements. A boutique hotel, the 102-room Lodge On The Desert is an authentic Old Pueblo experience and a Southern Arizona landmark, designed for leisure and business travelers alike. Situated on five acres in Midtown Tucson, it is set against the majestic backdrop of the Santa Catalina Mountains, with its charming hacienda-style accommodations, lush grounds, and historic charm make it Tucson's urban oasis and an Old Pueblo masterpiece. 9/29/2022

Sale:

\$16,000,000
\$156,862/unit

Size:

102 units

Buyer: An affiliate of Atira Hotels, Alvernon Lodge, LLC (Chicago, IL) c/o Sanjeev Misra, Manager

Seller: Lodge Partners, LLC an affiliate of Lodge in Tucson, LLC (Paradise Valley, AZ) c/o Robert Nahom, Member; Cushman & Wakefield (Phoenix) Bill Murney

Office Building: Tucson International Gateway Ctr Sells for \$11.45 Million

Bela Flor Communities has assembled 455 acres for a new master planned community, called Mandarin in Marana with the purchase of 113 additional acres for \$4.25 million. Mandarin Phase I is a proposed mixed-use development on 342 acres at Tangerine Road and the I-10/Union Pacific Railroad (UPR) Corridor. The project is proposed to include up to 2,500 residential units (single family detached, single family attached and multi-family) and commercial units including retail, hotels and more. The Mandarin Specific Plan was approved in 2009. There were approximately 1,500 SFR lots, out of the total 2,500, already committed to or in escrow within Mandarin Phase I. The latest 113 acres is Phase II. 8/1/2022

Sale:

\$11,449,000
\$117.27/SF

Size:

97,630 SF

Buyer: Galaxy Properties I, LP an affiliate of HSQ Group (Boca Raton, FL) c/o Christopher Allen, General Partner

Seller: Griffin Realty Trust affiliate, Griffin (Tucson) Essential Asset REIT II, LLC (El Segundo, CA) c/o Louis Sohn, Director of Acquisitions

Palm Vista Mobile Home Park: 106 Spaces Sold for \$8.3 Million

The Palm Vista Mobile Home Park at 5445 N Shannon Road sold with 106 mobile home spaces and amenities such as pool, clubhouse / office, storage building and new lighting around the property. Located in Central Tucson the property is located northwest of Curtis Road and Shannon on 10.23-acres and was built in 1960. The seller purchased the park 12/16/2016 for \$975,000. 9/30/2022

Sale:

\$8,300,000
\$78,301/space

Size:

106 spaces

Buyer: Palm Vista MHC, LLC an affiliate of Comfort Communities (El Cajon, CA) c/o Blake Comfort, Manager

Seller: GSWC Realty & Building Corp affiliate, 5445, LLC (Tucson) c/o Mark Wierzbinski, President; WVR Realty, LLC, Wocky Redsar

Tucson International Raceway Sold for Land Value at \$7.6 Million

The Tucson International Raceway at 4300 E Los Reales Road, with five buildings. sold for land value. The raceway had been closed for some time. The buyer is an industrial developer that purchased it to hold for development. Property is to the east of I-10 International Industrial Park Site, under development by Lincoln Property Company. The land for the raceway was last sold 1/14/2002 for \$604,000. 9/22/2022

Sale:

\$7,600,000
\$1.80/SF

Size:

97 acres

Buyer: Schnitzer Properties, LLC (Portland, OR) c/o Bill Rodewald, AZ Regional Manager; Cushman & Wakefield |PICOR; Rob Glaser and Jesse Blum

Seller: Raceway Partners, LLC (Wheatland, WY) c/o Robert Robley, Member; Tucson Realty Solutions, Tauna Robley

big deals

Banner Alzheimer's Institute Trades for \$7.5 Million

The build-to-suit medical building for Banner Alzheimer's Institute sold with 7.4 years remaining of a 10-year lease. Property was fully occupied by Banner Alzheimer's Institute and sold as an investment at a 5.25% cap rate. The seller had built the building for Banner in 2019. This was the buyer's upleg in a 1031 exchange. 9/30/2022

Sale:
\$7,500,000
\$497.22/SF

Buyer: Western Properties, Inc. (Seattle, WA) c/o Kevin Nedoluha, Director; CBRE (Tucson) Bryce Horner

Size:
15,084 SF

Seller: Wattis, Inc. affiliate, Hacienda Professional Office, LLC (Tucson) c/o Michael Wattis; CBRE (Tucson) David Montijo

Westmed Industrial Building Sold for \$7.3 Million

A Whataburger ground lease at 921 E Tucson Marketplace at the Bridges sold for \$2.8 million (\$71.44 PSF) for the 39,193 SF pad. The transaction involved the sale of the leased fee interest in the land. Whataburger was constructed in 2021 with a leased fee interest in the land. 8/26/2022

Sale:
\$7,300,000
\$66.83/SF

Buyer: Schnitzer Properties, LLC (Portland, OR) c/o Bill Rodewald, AZ Regional Manager

Size:
109,229 SF

Seller: WAA Investment Holdings, LLC affiliate, WAA Nogales HWY, LLC (Tucson) c/o April Worden, Trustee; Cushman & Wakefield | PICOR, Rob Glaser and Paul Hooker

Sunnyslope Apartments: 41 Units Sells for \$5.5 Million

Sunnyslope Apartments, a 25,296-square-foot investment property at 150 E. Hardy Rd. in Oro Valley sold for \$5.5 million. The 41-unit apartment property, built in 1971, on 1.43 acres. It sold with high occupancy. 9/1/2022

Sale:
\$5,500,000
\$134,146/unit

Buyer: Sunnyslope Apartments, LLC an affiliate of Dagtag, LLC (Tucson); Cushman & Wakefield | PICOR (Tucson) Allan Mendelsberg and Conrad Martinez

Size:
41 units

Seller: John Kevin Donahue (Berkeley, CA); Cushman & Wakefield | PICOR (Tucson) Allan Mendelsberg and Conrad Martinez

Placita Del Rio Shopping Center Sold for \$5.3 Million

Placita del Rio is located at 910-918 W Irvington Road, the "Main & Main" position in the SW Tucson trade area. The area hosts strong present-day demographics with estimated growth that will exceed other established areas in the metro area. The quality of the trade area and the specific location of Placita del Rio is demonstrated daily by the high number of national and regional brand names that have located in the immediate area of the I-19 and Irvington interchange and their typically strong sales performance and is in a Pima County Opportunity Zone. The redeveloped property includes three available restaurant / retail / automotive PADs. New parking ratio of $\pm 5.6/1,000$ SF (± 765 spaces), Irvington Rd monument signage and I-19 highway signage opportunities available for select tenants. 9/30/2022

Sale:
\$5,300,000
\$166.74/SF

Size:
31,786 SF

Buyer: MSC Investments Tucson, LLC an affiliate of Matt C Investments (Redlands, CA) c/o Mathew Canada

Seller: Ashland Group—Millennium and Nova Investments, LLCs (Tucson) c/o Duff Hearon, Manager; Western Retail Advisors (Phoenix) Bryan Ledbetter

Industrial Business Park: Ajo Evans Business Center Sells for \$5 Million

The Ajo/Evans Business Center at 1100 & 1200 East Ajo Way and 3819 and 3855 S Evans Blvd. sold for \$5 million. Four buildings, one @ 6,660 sf, one @ 12,134 sf, one @ 10,816 sf, one @ 6,078 sf. The asking lease rate at time of sale was \$9.60 / SF plus \$3.60 CAM charges. Property was 97% occupied of the total twenty-three suites. The seller purchased the property in May 2017 for \$2.2 million. 9/6/2022

Sale:
\$5,000,000
\$144.10/SF

Size:
35,688 SF

Buyer: FJM Merced Associates, an affiliate of FJM Investments, Inc. (San Francisco, CA) c/o Mark Pirie; Cushman & Wakefield (Phoenix) Robert Buckley

Seller: 15100 Family Limited Partnership (Rancho Palos Verdes, CA) c/o Mark Dessy; Hanley Investment Group (Corona Del Mar, CA) Brad Dessy

Culver's Restaurant Sells in Sale Leaseback for \$3.72 Million

Culver's Restaurant at 1955 W Valencia sold with a new 20-year lease with four 5-year options in a sale leaseback at a 5% cap rate. Rated by Forbes as the third best high-investment franchise in 2019, Culver's is a privately owned and operated American casual fast food restaurant chain known for their signature Butter Burgers and Frozen Custard. Other signature menu items include cheese curds, chicken sandwiches, fish, french fries, and salads. Established in 2011, the seller is a Culver's Franchisee focused on operating and developing restaurants in Tucson, AZ area and acquiring additional Culver's locations in other markets. Including the subject property, the seller currently owns and operates a total of 3 Culver's restaurants in the Greater Tucson, AZ area and 1 Culver's in the Greater Phoenix, AZ area. Seller constructed property in 2019 to owner occupy as a Culver's, paying \$1.3 million for the 41,387 SF lot. 9/9/2022

Buyer: Hirut H. Selsse Mesfine (San Jose, CA); Marcus & Millichap (Palo Alto) Joshua Johnson

Seller: Kolsrud Midvale Land LLC (Tucson) c/o Kyle Kolsrud, manager; Marcus & Millichap (Phoenix) Chris Lind and Nicholas Christifulli

Sale:

\$3,720,000
\$851.84/SF

Size:

4,367 SF

Ground Lease of Chipotle Mexican Grill at The Bridges Sells for \$3.35 Million

The leased fee interest in the land at 3150 S Kino Parkway sold for \$3.35 million. At time of sale there was an existing ground lease with Chipotle Mexican Grill built on the site in 2021. 9/9/2022

Buyer: Johnson's Trailer Parks, LLC and affiliate of Better Homes, LLC (Kalispell, MT) c/o Gary Johnson, Member

Seller: Bourn Properties' affiliate, BP Bridges Partners, LLC (Tucson) c/o Don Bourn; JLL (Phoenix) Regan Amato and Ryan Tanner

Sale:

\$3,350,000
\$1,452.73/SF

Size:

2,306 SF

348 Lots & Common Areas A and B—Canoa Ranch Sold for \$3 Million

348 platted lots and Common Area in Canoa Ranch, Green Valley sold for \$3 million. Buyer sold the land to seller earlier and seller platted the lots to sell back. Buyer intends to develop the lots. Average lot sizes are 60x100. 9/14/2022

Buyer: CR Block 27 Lan Development, LLC, and affiliate of Fairfield Homes / DJW Management (Oro Valley) c/o David Williamson

Seller: Meritage Homes affiliate, Meritage Homes of Arizona c/o Jeff Grobstein

Sale:

\$3,000,000
\$8,620/lot

Size:

348 platted lots

Medical Office Building: Former CODAC Building Sells for \$2.785 Million

Catholic Community Services of Southern Arizona bought the three vacant office buildings at 1650 E Fort Lowell Road in Tucson for \$2.8 million (\$143 PSF), formerly occupied by the seller, as a CODAC Health, Recovery & Wellness Center. The 19,495 square-foot building (built 1985) on 1.72 acres will be occupied by Catholic Community Services to replace the St. Elizabeth's / El Rio Health Center at 140 W Speedway Blvd that recently sold to Pima County Community College District for \$4 million (\$153 PSF). Pima College will be expanding into the 26,081 SF property on 3.36 acres at 140 West Speedway Blvd. adjacent to the current Pima Community College Campus. 9/7/2022

Buyer: Catholic Community Services of Southern Arizona Inc. (Tucson), c/o Ms. Marguerite Harman, CEO; VOLK Company, David Volk

Seller: Codac Health Recovery & Wellness Inc., affiliate, Serenity Holdings VII LLC; Cushman & Wakefield | PICOR (Tucson) Paul Hooker and Tom Nieman

Sale:

\$2,785,000
\$142.86/SF

Size:

19,495 SF

35 Acres of Industrial Acreage Sold for \$2.7 Million

The approximate 35 acres at 4550 E Los Reals sold with 5 acres occupied by Custom and Border Patrol for a migrant processing facility. The buyer plans to occupy the remaining 30 acres as an owner user for a concrete pipe manufacturing business. 9/15/2022

Buyer: DLJ Properties Tucson LLC (Reno, NV) c/o David Johnson, Manager

Seller: The Burris Hennessy & Company Profit Sharing Plan, et al c/o Mike Hennessy, Manager

Sale:

\$2,700,000
\$1.75/SF

Size:

35.45 acres

big deals

Vantage West Credit Union “Upside Down Pyramid” Building Sold for \$2.25 Million

The 11,379 SF two-story office building nicknamed the “Upside Down Pyramid” due to its iconic architecture. The seller Vantage West Credit Union will continue to operate a branch on the first floor. 1100 N. Wilmot Rd is one of the most distinguishable historic buildings in Tucson, AZ. This unique office building was designed by the architect, Robert Swaim in the 1970s. Due to the unique angles and the lack of 3-D modeling technology in the seventies, it was undeniably a challenge to construct this steel and glass structure. 9/20/2022

Sale:
\$2,250,000
\$197.82/SF

Size:
11,379 SF

Buyer: LRTucson (Phoenix) c/o Jeff Cahill; NAI Horizon (Tucson) Scott Soelter

Seller: Vantage West Credit Union (Tucson) c/o Robert Ramirez, CEO; Cushman & Wakefield | PICOR (Tucson) Rick Kleiner

O’Reilly Auto Parts Net Lease Sale for \$2.2 Million

The property at 1119 S 6th Avenue sold in a net leased sale, fully occupied by O’Reilly Auto Parts with 5.3 years remaining on a 20-year lease at a 5% cap rate. 9/15/2022

Sale:
\$2,200,000
\$314.29/SF

Buyer: The Jewell Partners, LP (Danville, CA)

Seller: GST Exempt Trust for Stacey S Dobos (Hillsborough, CA); Preserve West Capital (San Francisco, CA) Michael Maffia

Size:
7,000 SF

Pep Boys Net Lease Sale for \$2 Million

The Pep Boys at 3645 E Speedway Blvd. sold with approximately 8 Years remaining on the primary term with multiple options to extend on a triple net lease with two 10-year options. Recently Renovated in 2022 by Pep Boys at construction costs of \$500,000. 9/7/2022

Sale:
\$2,000,000
\$657.46/SF

Buyer: Steven Hawkins (Estacada, OR); Kelly Right Real Estate (Portland OR) Dwaine Rhea

Seller: Mark & Kimberly Serventi Revocable Trust (Chino Hills, CA); Sands Investment Group (Charlotte, NC) Gary Berwick

Size:
3,042 SF

Quik Mart Sells in Net Leased Investment for \$1.94 Million

The Quik Mart at 3499 S Wilmot Road sold in a net leased sale, with 20-year lease at a 5.80% cap rate. The property has two pumps with four fueling stations, pylon signage and parking for 14 cars. The property was purchased by seller in December, 2021 for \$1,317,130. 9/16/2022

Sale:
\$1,940,000
\$882/SF

Buyer: Pedro Antonio Ortego of Bakersfield, CA

Seller: Southwest Convenience SPE, LLC c/o Griffith Law Firm of Solano Beach, CA, c/o Brett Bishov; Marcus & Millichap (New York) Glen Kunofsky

Size:
2,200 SF

Industrial Property on Country Club Sold for \$1.6 Million

The industrial property at 3365 S Country Club Road sold to a California investor with tenant in tow. The three buildings built in 1968, have a fenced and gated yard and is occupied by Coastal Transport until the year end as tenant. The property last sold for \$346,000 in 1998. 9/2/2022

Sale:
\$1,600,000
\$202/SF

Buyer: Tucson CC Owners, LLC of Redondo Beach, CA c/o Michael Grannis

Seller: Port Wade, LLC of Tucson c/o Marc Kaplan; GRE Partners Gary Emerson

Size:
7,902 SF

10 SFR Lots Boulder Bridge Pass Dove Mountain Sells for \$1.52 Million

Fairfield Homes bought 10 finished lots at Boulder Bridge Pass III. This master-planned golf community is nestled at the base of the Tortolita Mountains surrounded by golf courses, hiking, and biking trails. Fairfield Homes has 78 homesites to choose from. Floorplans range from 2,300- to 4,000-square-feet, each with an optimized view of natural desert or golf course for these semi-custom homes. 9/9/2022

Sale:
\$1,515,800
\$151,580/lot

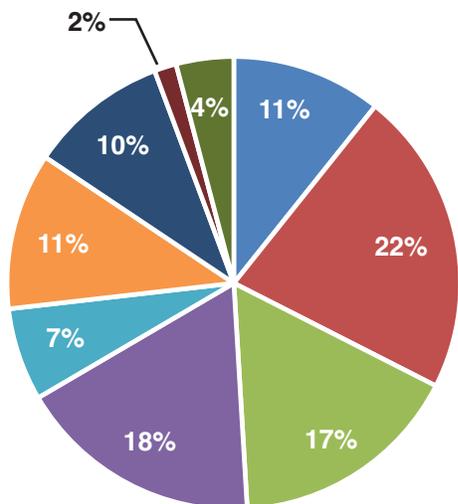
Buyer: Dove Land Holdings, LLC an affiliate of Fairfield Homes (Tucson) c/o David Williamson

Seller: Dove Mountain Investors, LLC an affiliate of Cottonwood Properties (Tucson) c/o David Mehl

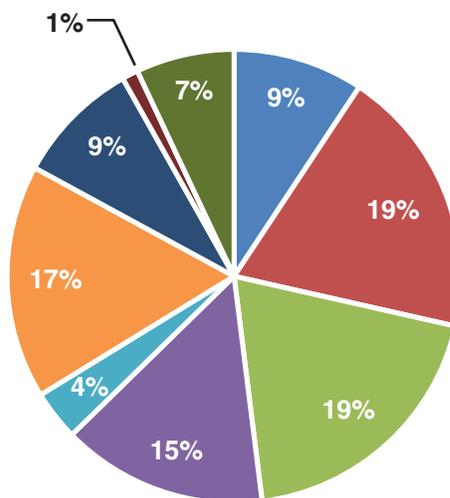
Size:
2.85 acres/10
finished lots

big deals

Pima County Commercial Sales Activity												
Year	Month	Sold Volume	# Sales	Industrial	Retail	MF	Office	Ind Land	Res Land	Comm Land	Hotel	Specialty
2022	September	\$ 243,849,569	69	10	16	13	9	6	6	6	1	2
	August	\$ 129,692,906	55	8	11	5	16	3	5	5	0	2
	July	\$ 456,703,006	82	7	18	12	15	5	8	12	2	3
	June	\$ 314,657,636	88	9	23	13	16	5	6	8	3	5
	May	\$ 155,071,853	55	10	9	5	8	5	7	7	1	3
	April	\$ 403,999,910	88	10	14	17	20	8	7	7	1	4
	March	\$ 329,918,429	68	3	14	17	12	1	12	5	1	3
	February	\$ 187,906,381	65	5	15	15	6	3	10	9	1	1
January	\$ 143,463,941	64	5	19	8	10	4	10	5	0	3	
2021	December	\$ 1,002,530,591	130	8	18	37	13	8	16	18	4	8
	November	\$ 369,886,452	77	4	22	12	11	5	13	4	3	3
	October	\$ 539,971,905	100	24	25	10	18	2	9	7	2	3
	September	\$ 440,157,322	85	5	16	16	11	3	15	10	4	5
1 mo. change		88%	25%	25%	45%	160%	-44%	100%	20%	20%		0%
1 yr. change		-45%	-19%	100%	0%	-19%	-18%	100%	-60%	-40%	-75%	-60%
2022 Jan-June			634	68	138	105	111	42	71	63	10	26
2021 Jan-June			785	73	151	153	115	28	131	70	9	55
Change in Volume Y-O-Y			-151	-5	-13	-48	-4	14	-60	-7	1	-29
Percentage Change Y-O-Y			-19.24%	-6.85%	-8.61%	-31.37%	-3.48%	50%	-45.8%	-10%	11%	-53%



Commercial Sales January-September 2022



Commercial Sales January-September 2021

- Industrial
- Residential Land
- Retail
- Commercial Land
- Multifamily
- Hotel
- Office
- Specialty
- Industrial Land

Data provided courtesy of RED Comps, a division of Real Estate Daily News

residential trends

Pima County Existing Sales Activity All Residential Property Types										
Year	Month	New Listings	Pending Sales	Closed Sales	Avg. DOM	Median Sales Price	Average Sales Price	Housing Affordability Index	Inventory of Homes for Sale	Months Supply
2021	September	1,764	1,319	1,392	14	\$325,000	\$380,655	117	1,873	1.3
	October	1,784	1,604	1,228	16	\$325,000	\$384,541	121	1,766	1.2
	November	1,335	1,543	1,385	20	\$330,000	\$395,299	119	1,574	1.1
	December	1,185	1,322	1,429	24	\$338,000	\$401,958	116	1,364	0.9
2022	January	1,433	1,687	1,123	24	\$334,500	\$395,783	117	1,103	0.7
	February	1,392	1,574	1,243	24	\$343,900	\$411,840	114	989	0.7
	March	1,615	1,688	1,517	21	\$349,900	\$432,842	112	964	0.7
	April	1,732	1,653	1,428	16	\$364,995	\$432,936	83	1,118	0.8
	May	2,002	1,800	1,838	17	\$359,900	\$429,029	84	1,702	1.0
	June	1,833	1,312	1,310	14	\$370,000	\$445,524	81	1,792	1.3
	July	1,738	1,210	1,119	18	\$370,000	\$433,059	81	2,249	1.6
	August	1,612	1,293	1,126	21	\$356,000	\$420,997	85	2,360	1.7
	September	1,455	1,028	1,064	28	\$356,750	\$414,323	84	2,610	2.0
1 mo. change		-9.7%	-20.5%	-5.5%	33.3%	0.2%	-1.6%	-1.2%	10.6%	17.6%
1 yr. change		-17.5%	-22.1%	-23.6%	100.0%	9.8%	8.8%	-28.2%	39.3%	53.8%

Source: TARMLS All Property Types

Pima County Luxury Sales Activity									
Year	Month	Inventory of Homes for Sale	Pending Sales	Closed Sales	Months' Supply	Median Sales Price	Average Sales Price	Avg. DOM	Avg. CDOM
2021	September	100		29	3.4	\$1,200,000	\$1,311,527	37	48
	October	107		30	3.6	\$1,300,000	\$1,511,982	44	55
	November	100		39	2.6	\$1,350,000	\$1,600,922	34	36
	December	110		38	2.9	\$1,237,500	\$1,486,367	42	91
2022	January	125	37	34	3.7	\$1,285,000	\$1,464,032	26	50
	February	115	40	34	3.4	\$1,375,000	\$1,635,487	88	106
	March	110	35	62	1.8	\$1,312,500	\$1,507,418	20	29
	April	136	20	46	3.0	\$1,349,048	\$1,489,016	35	55
	May	156	35	42	3.7	\$1,337,500	\$1,646,864	43	52
	June	165	14	52	3.2	\$1,295,000	\$1,484,490	14	15
	July	174	12	35	5.0	\$1,275,500	\$1,468,058	23	25
	August	177	25	42	4.2	\$1,390,000	\$1,511,085	78	99
	September	190	26	24	7.9	\$1,387,500	\$1,505,064	35	70
1 mo. change		7.3%	4.0%	-42.9%	87.9%	-0.2%	-0.4%	-55.1%	-29.3%
1 yr. change		90.0%		-17.2%	129.6%	15.6%	14.8%	-5.4%	45.8%

Source: TARMLS \$1M+ Sales

Pima County Rental Activity All Property Types						
Year	Month	Active Listings	Units Rented	Months Supply	Average Rent	Avg. DOM
2021	September	385	150	2.6	\$1,680	22
	October	390	162	2.4	\$1,613	26
	November	380	180	2.1	\$1,610	20
	December	355	135	2.6	\$1,622	21
2022	January	359	124	2.9	\$1,774	29
	February	359	144	2.5	\$1,655	26
	March	392	146	2.7	\$1,731	23
	April	371	168	2.2	\$1,748	23
	May	438	162	2.7	\$1,780	25
	June	509	200	2.5	\$1,706	22
	July	567	226	2.5	\$1,779	29
	August	532	277	1.9	\$1,819	27
	September	574	231	2.5	\$1,912	41
1 mo. change		7.9%	-16.6%	29.4%	5.1%	51.9%
1 yr. change		49.1%	54.0%	-3.2%	13.8%	86.4%

source: Tucson Association of Realtors

- 23.6%

+ 9.8%

+ 39.3%

Change in
Closed Sales
All Properties

Change in
Median Sales Price
All Properties

Change in
Homes for Sale
All Properties

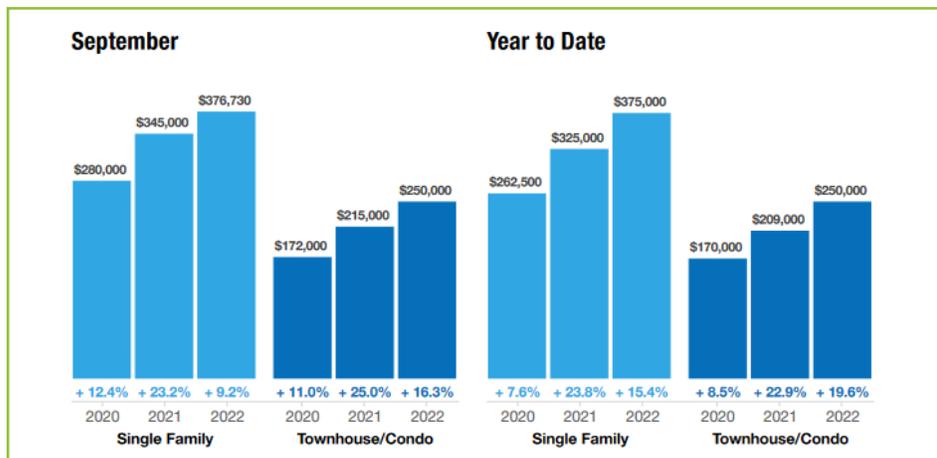
The U.S. real estate market continues to slow as we move into fall, as rising consumer prices and higher mortgage interest rates squeeze homebuyer budgets and cool activity. With inflation showing little sign of abating, the Federal Reserve implemented another 75-basis-point hike in September, marking the third such rate increase this year. The cost of borrowing has reached multi-year highs on everything from credit cards to auto loans in 2022 as mortgage interest rates topped 6% for the first time since 2008, causing existing home sales to decline for the seventh consecutive month.

New Listings decreased 18.7 percent for Single Family and 9.7 percent for Townhouse / Condo. Pending Sales decreased 25.0 percent for Single Family and 1.8 percent for Townhouse/ Condo. Inventory increased 40.1 percent for Single Family and 33.2 percent for Townhouse/ Condo.

Median Sales Price increased 9.2 percent to \$376,730 for Single Family and 16.3 percent to \$250,000 for Townhouse/Condo. Days on Market increased 86.7 percent for Single Family and 108.3 percent for Townhouse/Condo. Months Supply of Inventory increased 61.5 percent for Single Family and 40.0 percent for Townhouse/Condo.

Affordability challenges have priced many buyers out of the market this year, and buyers who do succeed in purchasing a home are finding that the costs of homeownership have increased significantly, with monthly mortgage payments more than 55% higher than a year ago, according to the National Association of REALTORS®. Inventory remains lower than normal, and as the market continue to shift, experts project homes will begin to spend more days on market and price growth will slow in the months ahead.

Sales activity covers residential real estate activity in Pima County as reported by the Tucson Association of REALTORS.



Median Sales Price: Point at which half of the sales sold for more and half sold for less, not accounting for seller concessions, in a given month.

residential trends



From innovative startups to companies celebrating their 100th year in business, the Tucson Metro Chamber boldly advocates for policies that encourage and assist companies large and small to achieve success. Join us as we work to champion an environment where your business thrives and our community prospers.

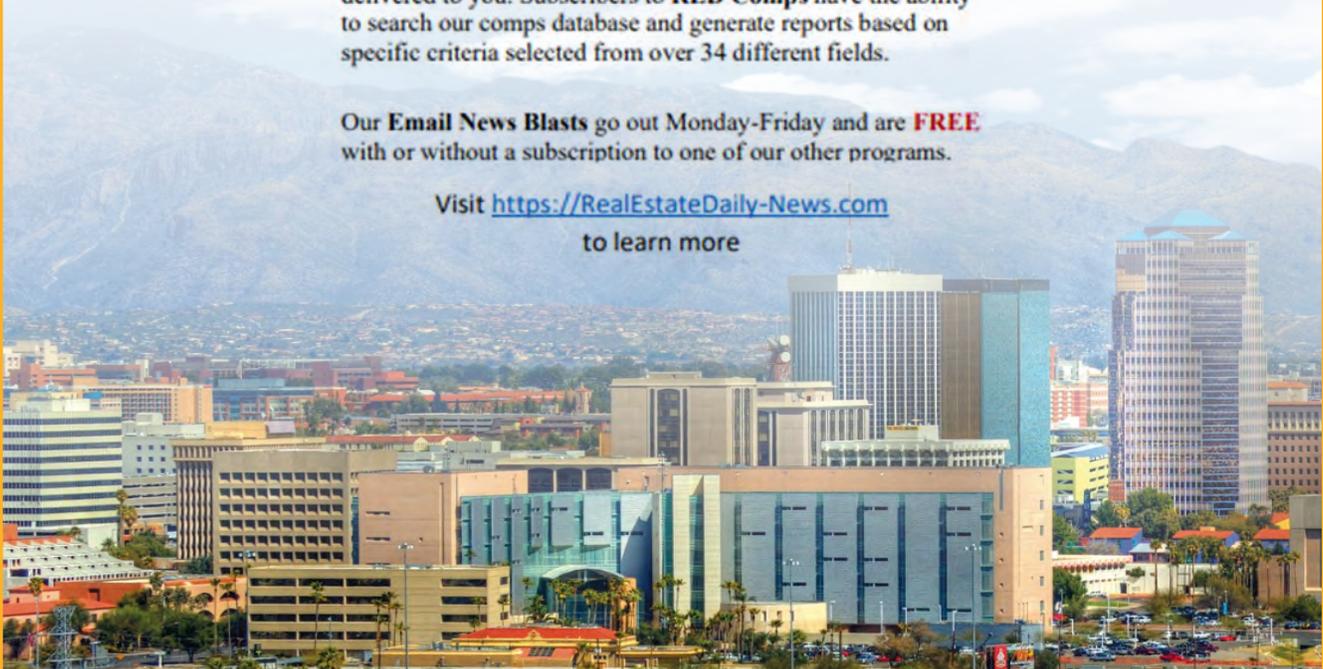


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"As a CCIM Designee, you are immediately recognized as an expert in commercial real estate. The courses taught are top-notch, and I use what I've learned every day in my business."

-Gary Heinfeld, CCIM, CPA, Advisors in Real Estate, Inc.



"This Chapter has opened a lot of opportunities for me via networking with some of the best brokers, investors, and developers in Tucson. It is the best commercial real estate network in our market."

-Isaac Figueroa, CCIM, Chief Commercial Officer



"CCIM Institute remains a great source of new business leads for me and a major resource to stay current. I can turn to my CCIM friends when I'm stumped on a deal and need to find a new path forward, or need insight into how a particular retailer or developer structures his/her deal."

-Debbie Heslop, CCIM, Senior Associate Broker



"Like most that arrive at the door of CCIM Institute, I was looking for a home, a place where I felt that I professionally belonged. The real value came from my personal relationships, experiences, and networking with the local CCIM Chapter."

-James P. Robertson, Jr., CCIM, MBA, Associate Broker



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Thursday, November 17, 2022

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Multifamily | Build-to-Rent | Casita Concepts

Presented by:

Sara Baker Partner • Baker, Peterson, Baker & Associates

IN PERSON MEETING 8:00–10:00am

7:30AM: registration

8:00AM: program start

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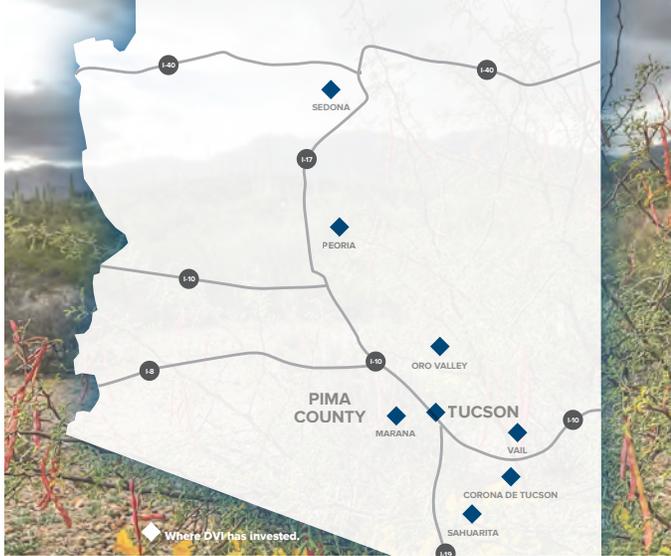
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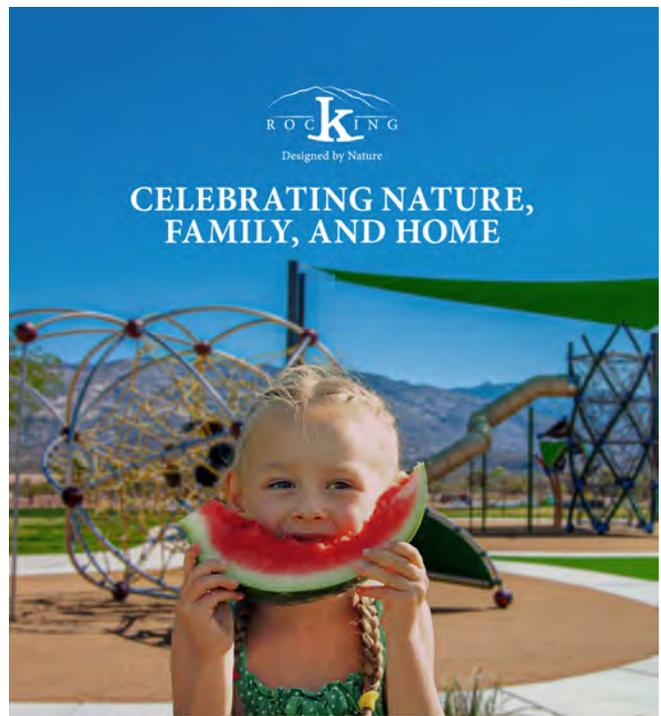
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PackDash is a concierge shipping service that specializes in global 3PL eCommerce fulfillment for small to mid-size businesses. Amongst our network of fulfillment centers we can help emerging brands scale across Direct-to-consumer, wholesale, and retail commerce with world class customer service and affordable shipping rates.

Prior to [PackDash](#), our team built and managed an eCommerce brand that craved a higher touch shipping service. After surveying the industry, it was clear that no one could provide what we were looking for unless our shipping volume was more than 20,000 shipments per month. That prompted us to build a solution for ourselves and other small to mid-size businesses.

Small to mid-size consumer brands need a concierge shipping service to help navigate the dynamic supply chain changes and increased consumer demand. The recent pandemic was a catalyst for changed shopping habits amongst consumers with eCommerce experiencing incredible growth and the demand for third-party logistics (3PL) shipping services follows closely along with this growth rate. PackDash helps brands grow, compete, and improve margin by leveraging our team, selling channels, and facilities to deliver an amazing customer experience.

3PL Has Been Around, But Not the PackDash Way

3PL services have been around for decades, but they are designed to support large enterprises with minimal flexibility and limited communication. PackDash is built to be nimble, communicative, and customer-centric with a heavy focus on communication and collaboration. Having a shipping partner who is accessible and available creates peace of mind for founders and operators who are focused on growing their sales.

In 2020, 3PL global revenue was \$961.8 billion U.S. dollars and will continue to have a 7.6% compound annual growth rate (CAGR) from 2022 to 2032 according to [Fact.mr's report on the third-party logistics market](#). The logistics industry measures it's potential market in trillions rather than billions.

Google-Backed Award Winner

PackDash was recently awarded \$100,000 in non-dilutive funding from Google's Black Founder Fund. Every year Google recognizes a cohort of ~150 exceptional Black owned businesses in the U.S. and provides mentorship, funding, and programming to help these businesses scale. PackDash is proud to say we are backed

by Google and looks forward to further recognition.

Rising postage costs are becoming harder and harder to pass along to the consumer. Amazon has set the standard that all shipping is free and lightning quick. However, if you operate outside of the Amazon ecosystem with FedEx, UPS, or USPS you can only match Amazon's speed at a premium cost. Higher shipping rates mean brands need to charge more for their product which can change the calculus for a consumer.

Small to mid-size consumer brands need a concierge shipping service to help navigate the dynamic supply chain changes and increased consumer demand. The recent pandemic was a catalyst for changed shopping habits amongst consumers with eCommerce experiencing incredible growth and the demand for third-party logistics (3PL)...

We have a proven model that we are scaling quickly. We look to innovate and add on additional value-added products and services once we reach established growth and profitability milestones.

The best business advise I have ever received. "If you're thinking of starting a business, it's either ideas on ice or action on fire... Action is really the only thing that matters."

In conclusion, I would just like to say, Tucson is a great place to live and grow a business. I invite other businesses to take a hard look at the benefits of being a part of this community.



We are a scrappy group with a background in high-growth tech enabled businesses! Kameron Norwood, Co-founder and COO, has an extensive career in IT staffing and has held unique roles designed for contractor satisfaction. Dave DiCosola, Co-founder and CEO, has an extensive career in tech sales and management in the Healthcare, Automotive, and Travel industry. Reach them at hello@packdash.com.





lightsense
TECHNOLOGY

Lightsense Technology, Inc. is a Tucson-based emerging technology company that is breaking new ground by translating expensive, tabletop spectrometer instrumentation into miniaturized, handheld platforms with its advanced optical design technology. The [Lightsense](#) technology portfolio and deep know-how are products of an accomplished team whose members in the past have designed a wide range of spectrometer products for several leading companies.

Lightsense has developed a radical new multispectral architecture, a platform that incorporates three or more different and independent spectroscopies, with data fusion applied to the spectral outputs and machine learning (ML) for pattern recognition and analytics, termed Enhanced Photodetection Spectroscopy, or EPS. While ML has been applied extensively in spectroscopy, Lightsense is the first to integrate spectra from multiple different spectroscopies.

The Lightsense spectrometers have a wide range of applications, but our focus is to find solutions for some of the more intractable problems in public health. This includes the opioid epidemic, where at the top of the wish list of Law enforcement is an analyzer that can detect fentanyl with high sensitivity and accuracy, and that is small and fits in a pocket. That's the market our first product, just recently launched, is aimed at. This product is an EPS spectrometer that is a point-and-shoot detector for illicit drugs, including fentanyl, and operates in the deep UV region of the spectrum. It can detect and identify the illicit drugs with unsurpassed accuracy and sensitivity and is currently with several police and sheriff's departments across the country. The detector is a handheld device with the footprint of a smartphone and is shown in the figure on this page.



Epidemics are now appearing with increasing frequency, and we need to develop better tools for early detection to be prepared for the next one. But in doctors' offices, there is a constant and ongoing need to detect and identify disease-causing pathogens,

“The Lightsense spectrometers have a wide range of applications, but our focus is to find solutions for some of the more intractable problems in public health... Epidemics are now appearing with increasing frequency, and we need better tools for early detection to be prepared for the next one.”

both viral and bacterial. If you can determine that the patient has a viral disease, antibiotics should not be prescribed. This would help reduce the excessive consumption of antibiotics that is causing a lot of problems. We have shown that we can detect and identify viruses in saliva, experiments that were done with six different viruses, including coronavirus. The Lightsense spectrometer technology will be ready for the next inevitable pandemic as well as providing instant analysis of respiratory diseases in the doctor's office.

Food safety is a critical issue with foodborne outbreaks occurring every year, causing illnesses, hospitalization and even death. Technology under development at Lightsense will detect and identify bacterial pathogens and help secure the food supply. Our device will ultimately be a hand-portable instrument that can deliver results within minutes anywhere. We have already shown that we can detect and identify all the three major pathogens that appear in food: Salmonella, Listeria and E.coli. The technology is sensitive enough to even identify different strains of the same pathogen. To expand this research effort, we have formed a collaboration with the Food Safety Laboratory in the Animal and Comparative Biomedical Sciences Department at the University of Arizona.

One of the early markets for bacterial detection is the need of the pharmaceutical industry to detect microbes in ultra-pure water in drug manufacturing, a critical issue for the FDA-regulated industry. Instead of the current practice of sampling water to grow bacteria in petri-dishes, where results are available in days, Lightsense is developing a microbial detector for this market that will give instant,

[continued on page 24](#)



Transparency & Incentives Align at Zendoor

[Zendoor](#) is an online marketplace connecting property owners with the best property managers. As anyone who owns residential rental property knows, finding a great property manager usually requires word-of-mouth referrals and lots of trial and error. With Zendoor, you can browse, evaluate, and hire the best property manager for your portfolio based on a proven track record of high performance.

“To provide better transparency to owners, Zendoor built our property management software in-house. The Zendoor owner portal gives owners 24/7 access to leasing updates, maintenance work, and the property’s bank account.”

A Bit of History

Our founders, Ryan Smith and Angel Herrera, previously built a sizable real estate development firm specializing in multifamily rental communities. After struggling to find great property managers for their investments, they started Zendoor. Before Zendoor, they outsourced management to small property management companies and even tried hiring their own property management professionals in an attempt to self-manage. Their property management experiences were awful: funds were mismanaged, their managers were hard to get ahold of, and so much of the operations were offline (paper invoices, haphazard phone calls to vendors, etc.). It was impossible to track the performance of their property managers with so little insight into the day-to-day operations.

Zendoor was built with two key objectives: incentives alignment and radical transparency. With Zendoor, there are no manager salaries. Instead, managers are compensated with the management fees for the properties they manage (a percentage of the property’s income). Formerly a real estate broker himself, co-founder Ryan Smith was inspired by the broker compensation model: brokers are paid a commission based on every deal they close. Because of this, their incentives are closely aligned with property owners. Managers in the Zendoor marketplace are incentivized to maximize the NOI of their properties and provide excellent service to owners and residents. Property owners can easily switch between managers in the marketplace, too, so your management team is constantly working to earn your business.

“Radical” Transparency With Zendoor

Zendoor built our property management software in-house to provide better transparency to owners. The Zendoor owner portal gives owners 24/7 access to leasing updates, maintenance work, and the property’s bank account. As property owners ourselves, we didn’t enjoy waiting for our monthly financial packets from managers, so we designed Zendoor’s owner portal to showcase your property’s most crucial metrics in real-time.

Without Zendoor, you’ll likely choose a property management company based on your conversations with their sales rep or company owner. We’ve seen many owners disappointed to realize their main point of contact—their property or portfolio manager—is much different from the person who sold them on the company. Further, it isn’t easy to benchmark your manager’s performance against other options and ensure you’re getting the best service. Zendoor solves both of these problems through our tech-enabled marketplace.

In trying to build a better solution for property owners, we’ve had to figure out how to attract the best property managers. Our platform allows high-performing managers to create the successful business they’ve always wanted. With a unique compensation model and a full stack of software offerings, we have created an environment where hardworking people can succeed as entrepreneurs without any prior experience or knowledge about starting their own companies from scratch! The sense of ownership is evident in the level of service they provide to their customers. Managers in our marketplace treat their properties like their own investments.

Zendoor’s Vision

The number of Americans living in rental homes managed by third-party property managers is on the rise. 35% of American households are rented, and a third-party property manager manages 50% of those homes. That’s 75 million Americans living in homes managed by third-party property managers. We are committed to improving the rental experience for all stakeholders by connecting every property owner with the best property managers.

In the last year, we’ve welcomed Blaine Light as COO (former Uber, Qwick), Courtney Newcombe as VP of Finance (former Deloitte), and Sam Walsh as Director of Property Management (former Greystar) to our team. We’ve got more exciting news to share in the coming months—keep an eye on our website!

The Biggest Challenge We Face Today

We used to win most new business when properties changed hands. With multifamily sales slowing down, we’re hoping to show current owners how they can increase their NOI by using one of our managers instead. We realize switching management companies can cause much turbulence for owners and residents, so we provide data migration and onboarding services to all managers in the Zendoor marketplace to ensure smooth transitions. Right now, we’re offering free rent and expense analyses for owners; we’ll provide a report detailing how their P&L stacks up against similar properties in our marketplace to determine if making a manager

[continued on page 24](#)

real-time information with the unsurpassed sensitivity of being able to see a single microbe in ultra-pure water. This platform will form the basis for bacterial detection in the food supply chain.

Machine learning is becoming a central component of analytics for many applications, and it is a powerful tool that is an integral part of our analysis. Machine learning has shown an uncanny ability to ferret out subtle features from a complex background and is a core technology for EPS. To develop the algorithms for our multi-channel spectrometers, we have formed a close collaboration with key people in the Mathematics Department at the UA and the Computer Science Department at ASU, and how have a team of high-level experts, with additional advisors, focusing on this critical task.

The markets addressed by the Lightsense technology are very large, multi-billion dollar markets. For food safety, new regulatory demands such as the FDA's Food Safety Modernization Act (FSMA) are aimed at minimizing the likelihood of outbreaks and ensure safe products for the consumers at enormous savings for the industries affected. For Pharma manufacturing, the industry currently spends more than \$15 billion per year on testing that can be replaced with the Lightsense technology. The market for optical illicit drug detection devices is roughly \$500 million per year, but the demand is significantly greater. The opioid epidemic kills more than 100,000 people a year, and there is a clear demand for more accurate and easy-to-use detection devices. The Covid pandemic highlighted the need for rapid detection of viral pathogens, instruments fast enough to scan people standing in line at airports and other venues.

These are problems the Lightsense miniature EPS instruments are designed to solve. With the launch of our first drug detector product, and promising results coming from our laboratory on pathogen detection, we are well positioned to attack these seemingly intractable problems of public health.

Founder and CEO Terje Skotheim is a world-renowned scientist in physics and materials science. For more than 30 years he has focused on bringing technologies from the laboratory to the product stage and market, including advanced spectrometers, microsystems (MEMS), lithium batteries, biosensors, and high-power lasers, with over 75 patents. He is a founder of several startup companies and holds a B.S. in physics from MIT and a Ph.D. in physics from UC Berkeley. Dr. Skotheim can be reached at tskotheim@lightsensetechnology.com.



TRANSPARENCY AND INCENTIVES AT ZENDOOR

» continued from page 23

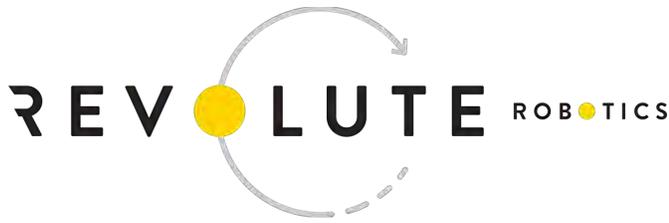
switch would be worthwhile. The free reports can be requested at getstarted.zendoor.com.

Building Momentum

We launched Zendoor a little over a year ago and have grown to 1,500+ doors managed on our platform. Our product is rapidly improving, and we're expanding our team to accelerate feature development and growth. We're looking for talented people in engineering, product, business operations, and sales. We'll be updating our website with active job postings soon. In the meantime, interested candidates can shoot us a message: talent@zendoor.com.

Angel Herrera (CEO) and Ryan Smith (President) are the co-founders of Zendoor. Ryan began his career as a multifamily broker while still in college studying Finance. He built a deep real estate network in Phoenix and sold over 4,000 apartment units (\$500+ million in total sales volume). He and Angel joined forces to start a development firm specializing in multifamily new-build and value add projects. After struggling to find great property managers for their projects, they started Zendoor. They can be reached at Angel@zendoor.com and Ryan@zendoor.com.





Every 1 in 200 confined space inspections results in someone getting accidentally injured or killed. Revolute Robotics is on a mission to keep humans out of harm's way. This is done by reducing or eliminating the need to send human workers into dangerous spaces. Traditional confined space inspections are performed manually, where someone must crawl through a dirty, dangerous area to assess the structural integrity of the surrounding infrastructure. By using robots, humans reduce or eliminate the need to perform inspections manually. This drastically cuts back on labor, insurance, and staging costs, as well as reduces the time that revenue-generating assets are taken out of commission. Case studies have demonstrated the ability to save hundreds of thousands of dollars on each inspection using a remote inspection tool.

Hybrid Ground & Aerial Robots Reach Beta Testing

[Revolute Robotics](#) is a developer of hybrid ground & aerial data collection robots. The company's robot has a crash-proof shell that allows inspecting confined and complex spaces with the ability to roll on the ground for a considerably longer operating time. This optimized mobility and battery life enables remote inspection, construction site mapping, building security, agriculture field scouting, and a host of military applications.

It is estimated that over \$12 billion per year is spent on related inspection technologies. Revolute Robotics' target market are inspection service companies who service the oil & gas, power, chemical, and utilities sectors. These inspection companies have shown tremendous interest in using Revolute Robotics technology in the aforementioned verticals, and beta testing is currently scheduled.

There are no other hybrid ground & aerial robots on the market. Caged drones have just started gaining popularity and as a result indoor inspections have become more common. But these systems fly for merely 10–15 minutes at a time. By using the energy-saving ability to roll on the ground, Revolute Robotics' robot can operate for up to 10x longer, making it the perfect inspection system for larger asset inspections.

The Future is Now

Revolute Robotics is seeking more funding which will allow them to purchase more advanced equipment and hire more engineers with expertise in robotics design and control systems. Revolute Robotics prides itself on having a diverse team with varying skillsets, strong culture, and passionate belief in defining a new generation of mobile robots.



“There are no other hybrid ground & aerial robots on the market...By using the energy-saving ability to roll on the ground, Revolute Robotics' robot can operate for up to 10x longer (than flying drones), making it the perfect inspection system for larger asset inspections.”

Collin Taylor has been in the commercial drone industry for nearly a decade prior to founding Revolute Robotics. He spent the majority of his career in sales and account management servicing construction and utilities clients. His entrepreneurial journey began in high school when he started a clothing company to determine if entrepreneurship was truly on his path. He discovered his love and excitement for the constant change and challenge of running a business.

Collin's background is in B2B drone sales where he has seen many different types of drones and ground robots used for commercial purposes. His co-founder, Sahand Sabet, is a former NASA JPL engineer who received his PhD from the Aerospace and Mechanical Engineering department at the University of Arizona. Despite active studies in the field of hybrid robotics, none of these systems had made it to industry, which inspired Sahand to dedicate his PhD to pursuing the required modifications for bringing this vision to reality. Collin and Sahand met at the University of Arizona's McGuire Center for Entrepreneurship, and after learning about each other's backgrounds, the two decided to team up and take the product to market.

For more information, Collin should be reached at Collin@Revoluterobotics.com.





For the past eight years, [Earthworks Environmental](#) has employed [ERX](#), an environmental reporting software program that puts all aspects of environmental compliance into one program. This includes permits, inspections, and maps.

ERX is the software program we created to house all of our inspections for our clients; it takes what used to be done on carbon copy paper and creates a more manageable electronic format.

“ERX, an environmental reporting software program that puts all aspects of environmental compliance into one program. This includes permits, inspections, and maps.”

The ease of use for both Earthworks’ compliance managers (inspectors) and the client (land developers, superintendents, trades, regulators, etc.) is exponential. The feedback we have been given by our clients and the regulatory community has been astounding.

One of the largest national homebuilders in the U.S. purchased a license for ERX for its own use throughout all of its national locations. We will be assisting them to get our program into their in-house system and continue to help manage and update the program as well.

ERX was developed for large-scale national builders based on their feedback of what they wanted and needed. It is user friendly for consultants, builders, and regulators. It is customizable to specific projects, builders, and states. It was created by builders and stormwater experts.

Earthworks Environmental currently has approximately 2,400 active users nationally in ERX. We’ve now made it available as a subscription base or license purchased.

ERX is a great tool for a variety of reasons. It provides the ability for proposal requests, corrective actions are labeled and numbered,

it features a regulator button which allows everyone associated with that site to get notifications, it is customizable according to region and city regulatory requirements, and inspection forms take less time to fill out for inspectors.

ERX also provides a digital rain log that each morning sends inspectors an email telling them where rain inspections are required. It replaces an actual rain gauge on-site. Digital maps and editing allow for a project to be viewed remotely via a live map.

Other features include customizable templates for inspection reports, the ability to track and manage action items noted during an inspection, and an alert and notification system for overdue items.

With ERX, you can add as many users as needed with ability to manage user access and roles. All documents and data are accessible online from any device. ERX provides secure and reliable records retention, which meet regulatory requirements.

Earthworks Environmental boasts 61 employees nationwide with work performed in 24 markets. It consults on more than 1,500 permits nationally.

Services provided include stormwater pollution prevention, dust control, and construction safety compliances. The firm primarily serves land developers, vertical developers, commercial construction, and land-holding companies. To learn more about Earthworks Environmental visit [earthworksenv.com](#).

Cherie Koester, CEO at Earthworks Environmental, founded company September 2014. Her goal is to nurture and grow Earthworks into the most prestigious and experienced environmental consulting firm in the U.S., specializing in dust control and storm water pollution prevention. With her wealth of experience, that goal likely will be achieved sooner than later.

Cherie founded Earthworks after serving as Director of Environmental Compliance for a large landscape maintenance and landscape construction company in Metro Phoenix. While at that firm she created and ran the environmental compliance and safety division. Previous to that role, she was a compliance inspector for the Maricopa County Air Quality Department.

Cherie gained five years of experience working closely with the development and construction industries by inspecting a wide variety of regulated sites and sources. She is a member of the Clear Air Council for MCAQD and is an expert in storm water pollution prevention and the National Pollutant Discharge Elimination System.

Cherie received her MS degree in International Environmental Technology Management & Sustainability in December 2011 from Arizona State University. She earned her BS in May 2008 from ASU and also holds an associate degree from Northeast Wisconsin Technical College in business administration. Contact Cheri at Cherie.Koester@EarthworksEnv.com.





Vermaland

The federal government has made it clear that they're ready to invest in renewable energy. The sun is a free and renewable energy source, and solar farms can generate enough electricity to power large numbers of homes, large campuses, manufacturing, and other business facilities. However, building a solar farm requires significant amounts of land, so it's not always possible for every area. Here's what you need to know about solar farms and how they can benefit your business or investment portfolio, especially if you own large land parcels suitable for use in solar.

Types of Land Suitable for Solar Farms

The land that is most effective for solar farms should be flat and clear of flood plain. The ideal parcel size ranges from 700 acres up to 3000 acres or more for efficient solar farming. The land parcel should be close to transmission lines and within three miles of a substation. Land that is close to an electric infrastructure is also ideal.

Benefits of Solar Farms

Solar farms can benefit businesses, communities, and the environment. Solar farms can help lower carbon emissions by reducing our dependence on fossil fuels, positively affecting the environment. Additionally, by lowering electricity costs for consumers, they reduce pollution from burning fossil fuels and help create large numbers of jobs in the growing solar industry. Solar farms can:

- Reduce energy costs
- Provide a hedge against energy price increases
- Provide a hedge against energy price volatility
- Provide a hedge against energy shortages
- Provide a hedge against power outages and grid instability

Vermaland solar farms are a great way to produce renewable energy and help the environment. They can also be used as an investment opportunity for businesses looking to make money in the long term. Incentives for solar farms are part of the federal infrastructure bill recently passed by Congress. This is a significant step forward for renewable energy, and it's a huge win for all of us who want to see our environment thrive. The bill provides \$1 trillion over the next 10 years to fund "projects that will create jobs and improve the quality of life in our communities," according to President Biden.

The bill also includes provisions that offer tax credits for companies that install solar panels on their land. For example, a company can receive a tax credit worth 30% of the cost of installing solar panels on its land if they don't already have solar panels installed on the property. This means that if a company spends \$100,000 on

installing solar panels on its property, it could receive a \$30,000 tax credit from the federal government. The goal is to encourage more Americans to invest in solar power, which will help lower our dependence on fossil fuels like coal and natural gas.

Another provision allows solar farms to be depreciated over ten years, with a possible five-year extension. This is a huge step forward for solar farms, which have been stuck at the same depreciation rate since their inception in 2005. The new legislation will allow businesses to take advantage of the accelerated depreciation rules and invest more heavily in solar farms, which are already growing at an astonishing pace.

"...building a solar farm requires significant amounts of land, so it's not always possible for every area."

Solar farms are already growing in popularity, but they've also faced some challenges in terms of getting financing. The new infrastructure bill aims to change this by offering incentives for solar farms and making it easier for people to get permits to build them on their land. If you own land where you think a solar farm might work well, you should explore your options now to take advantage of these incentives before time runs out. The provision also allows companies to sell electricity directly to utilities rather than through third parties, so they wouldn't have to pay fees and taxes associated with those transactions. The bill also exempts renewable energy systems from property taxes, and value-added taxes levied at each production or distribution stage.

Vermaland solar farms will undoubtedly be an important part of our future, and we need the government's help to ensure they get off the ground. By offering tax credits for solar energy and providing grants for research into new technologies like solar panels and batteries, these incentives will help our country to transition toward a greener future. If you own suitable land, now is the perfect time to explore solar farming with an experienced land development company.

Kuldip Verma, PE was raised in New Delhi, India and went to Thapar Institute of Engineering and Technology. There he received his BS in Mechanical Engineering. Kuldip is the founder and CEO of Vermaland, LLC, which is one of the largest land holdings company in Arizona. He owns over 25,000 acres in Arizona. Kuldip was listed as AZRE's Philanthropist of the Year in 2014 and Phoenix Business Journal's Most Influential Business Leaders in 2015. He can be contacted at Kuldip@Vermaland.com.





In a time of rapid redevelopment and high demand, it's worth considering trading up on a rental property in favor of a buy-and-hold investment in land for future development. One of the smartest ways to work this type of deal is to leverage a rental property into a larger land investment through a 1031 exchange.

Choosing to trade up for land is an exceptional investment that can help you get more out of the value of your rental property and create a better future for yourself and your family. When you invest in land, it doesn't depreciate or become obsolete, which means that it has the potential to appreciate in value over time. Another benefit is that land does not face inflationary pressures like other types of investments; therefore, its price tends to increase steadily over time without worrying about losing value due to market fluctuations or economic changes.

What is a 1031 Exchange?

A 1031 exchange is a tax code that allows you to trade one property for another without paying taxes. It's used by investors to trade properties that they don't want to hold onto and reinvest in more profitable real estate. You can use 1031 exchanges to buy or sell any kind of property, including homes, warehouses, apartment buildings, and even office buildings. The only difference between a 1031 exchange and other exchanges is that under current law, every taxpayer is allowed two exchanges per year with no limit on the number of exchanges over their lifetime (there's also no requirement that all your assets be involved in the same transaction). However, when you trade one property for another, it must be of equal value. If the properties are not valued at the same amount, this is known as a "non-arm's length" exchange and will not qualify for tax-deferred treatment.

The exchanged property must also be held for investment purposes. The IRS defines investment properties as those held for rental income or used in a trade or business (such as a restaurant). Alternatively, they may be held for productive use in a trade or business or for investment purposes (such as vacant land). In addition to these guidelines, there are three main categories of 1031 exchanges: trader/investor, builder/contractor, and dealer/re-trader.

Use Your Equity Wisely

To get the most out of your investment, you must ensure that buying a particular piece of land is worthwhile. Look for great opportunities, but don't rush into buying a new property. Review long-term trends like population growth and overall housing demand before making any decisions about where and when it makes sense for your investment portfolio

What to Watch Out For in a 1031 Exchange

- First, make sure the properties have the same value.
- Next, make sure the properties have the same mortgage balance.
- Finally, read through all of your documentation thoroughly and identify exactly what kind of property you want to exchange

before you do anything else! This is a massive step in making sure that everything goes smoothly during this process because it helps prevent any mistakes from happening and keeps everything organized so that nothing gets lost along the way.

Eligible Properties for a 1031 Exchange

You can exchange any real estate property for another. The most common 1031 exchanges involve the sale of one rental property to purchase another. Still, it is also possible to sell a primary residence or personal residence and buy an investment property. In general, these properties can be located in any state in the United States and worldwide. There are no restrictions on where you can use a 1031 Exchange Closed-end or Open-ended Qualified Intermediary (QI) to process your exchange.

How a 1031 Exchange Can Create Bigger Land Investment Opportunities

- A 1031 exchange can help you buy a bigger land investment. A 1031 exchange can also help you find a better rental property, an investment property, or even the ideal land investment for you.
- A 1031 exchange is one of the best ways to maximize profits and expand your portfolio by creating bigger land investments.

Main Benefits of a 1031 Exchange

- You can use your 1031 exchange to purchase a larger property. If you want to diversify your holdings and invest in a larger property, you may need more cash than what's available in your original investment account. A 1031 exchange allows you to use money from selling one property as a down payment on another without paying taxes on the gain from selling that first property.
- A 1031 exchange is a great way to make more money from your rental property and can also help you acquire larger land investments for your portfolio. If you are looking for ways to grow your land portfolio and make more money, a 1031 exchange might be something that would work well for you!

Anita Verma-Lallian is the CEO and Founder of [Arizona Land Consulting](http://ArizonaLandConsulting.com), where she provides full concierge services for land seekers and developers of all types of sites and assists investors in discovering viable properties in the West Valley. Anita founded Arizona Land Consulting in 2020, a year after she co-founded land development and investment company, Equity Land Group. She also holds the title of Director of Marketing at her father's company, Vermaland, where she also heads the company's solar division. Anita graduated from the University of Arizona in 2004 with a BS in Business Administration, and a double major in marketing and finance, and received her MBA from the University of Southern California in 2007. She can be contacted at Anita@vermaland.com.





In a time of market uncertainty, investing in commercial real estate property remains a desirable investment thanks to its stable nature. Commercial real estate is the perfect investment— one that is highly profitable and completely secure, with numerous tax advantages and stability; it's, like the unicorn, a mythical beast. Investments have always, from the very beginning, entailed the idea of some risk. Commercial real estate property investments are a secure investment that provides steady cash flow and the potential to create growth in a community.

Investing in commercial real estate property is not a new concept but to many investors, it is still a mystery. Commercial real estate refers to properties that are primarily used to conduct business and provide income to the property owner, such as office space, stores, restaurants, apartment buildings, manufacturing facilities, and warehouses. The right commercial real estate property coupled with the right developers can revitalize or grow an entire community in more ways than you may know. In fact, you could argue that investing in commercial real estate property is a viable catalyst to stimulate economic growth in everything from small businesses to individual homeowners within a community. The ripple effect resulting from a proper commercial real estate investment can have a resounding impact on a community for years—if not decades.

Ways to Invest in Your Community

Done properly, commercial real estate investments can improve a local community in more ways than one. After the piece of land is bought, choosing to sell it to the right developer can create opportunities to further develop and invest in your community. With the right partnership, your property can be used to create job opportunities, attract tourists, create sustainability efforts and so much more.

For instance, the [Mangat Group](#) is utilizing a piece of property to build a world-class cricket stadium to serve the international cricket community. Currently, there are limited places for cricket players and enthusiasts to play in the United States, as games have been played on baseball and soccer fields in recent years. This stadium comes to fulfill the community needs of an underserved population of cricket players. The MG Cricket Stadium will be the second ICC-Certified cricket stadium in North America and the first west of the Mississippi. This 20,000-seat international stadium will hopefully lead to the creation of Major League Cricket across the country. The goal when purchasing this piece of property, was to create a dedicated place for all cricket enthusiasts, local and international, to enjoy the sport with accurate accommodations and proper field dimensions.

Along with the cricket stadium, The Mangat Group with a team of developers plan to build a state-of-the-art soccer field and pickleball court fulfilling other needs of the community. To drive more attraction and commerce to the community, a hotel and shops for entertainment will be located on the property as well. This stadium comes at a perfect time of growth and development in Phoenix's west valley and Arizona. Many companies continue to relocate to the area bringing more

opportunities and growth for the community.

Job Creation

Even more so than residential investments, commercial real estate investments can stimulate the economy. Developing a commercial real estate property, like MG Cricket Stadium, will require more boots on the ground which means more contractors to develop the property, attorneys to close the deal, and future employees to run the business. A development from a commercial real estate property will require a lot more work and a lot more people.

Every dollar spent investing on a commercial real estate property in one way or another is put back into the community. From the nails that are bought from the local hardware store, the plumber that is used to ensure everything is in working order, properties create a demand for local business, and that demand translates into jobs. Bringing in projects like the cricket stadium, can create a ripple effect in a community that drives more people to the community creating limitless opportunities of expansion for this community. More jobs and commerce mean more tax revenue, more valuable properties and more prosperous communities. When you are investing in a commercial real estate property, there is a good chance you are helping a lot more people than you may be aware of.

Community Development

Investing in real estate allows the opportunity for investors to create lasting impact in their communities. Commercial real estate property investments have a resounding impact on the local community, and the extent of the benefits are limitless. The MG Cricket Stadium not only serves the local and international cricket community, but also spearheads a massive job opportunity movement for the local community. It also can create an influx in future business developments, attract tourism, provide sustainability efforts and more due to the popularity and attraction. The next time you decide to make an investment, consider the impact of commercial real estate property and understand just how much your impact may be felt.

Investing in commercial real estate property is a great way to make money and can also lead to major community development initiatives. If you are looking for ways to grow your investment portfolio and create change, commercial real estate investing might be for you!

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Tony Mangat is the founder of the Mangat Group, a Glendale, Arizona-based entrepreneurial and investment firm focused on creating opportunities and making the world a better place. With zero real estate experience, Mangat went from truck driving to developing storage centers and truck stops in Arizona. This led to Mangat growing his portfolio to now roughly 1,000 acres in the Phoenix metro area. Today, The Mangat Group includes a portfolio of companies including a trucking company, a land development company, a film and streaming content production company and more.

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Photographer: Carl Schultz



The University of Arizona Center for Innovation

(UACI) is a leader in the entrepreneurial ecosystem and has long served the region’s strong and vibrant community of innovators. UACI startup incubator network serves startups both in-person and virtually and has locations across the Southern Arizona region. UACI offers two web lab locations for startups in life science, one at the UA Tech Park off Rita Road and I-10 and has another bioscience focused incubator in Oro Valley.

UACI outposts in rural communities have been established in the Town of Sahuarita, Sierra Vista and Vail to incubation services and enhance the regional economic activities. The UACI at Biosphere 2 is the most unique outpost with a focus on renewable energy technologies. UACI at the Biosphere 2 provides a unique large-scale experimental apparatus housing seven model ecosystems providing multidisciplinary scientists and sustainable tech startups the ability to test and demonstrate new inventions.

UACI supports science and technology companies at any stage of development coming from the University of Arizona, the general Tucson community, and internationally. This is done by providing access to people, programming and places that help entrepreneurs take

their companies from idea to market. Startups go through a 28-point structured roadmap that takes them through a continuum of education provided by mentors, advisors and community collaborators.

UACI also provides access to service providers, industry cluster groups, interns and connections to potential customers and strategic partners. Entrepreneurs utilize various physical spaces that include offices, wet and dry labs, meeting rooms, a prototyping center, collaboration areas and the infrastructure to support these spaces. Businesses seeking international expansion can directly locate to Southern Arizona knowing that UACI will provide the necessary resources and programming needed for new market entry in the US. UACI is recognized as a Soft-Landing designee from the International Business Innovation Association (InBIA). This designation is very prestigious with only a handful of designees world-wide. With the official certification from InBIA, international companies can be assured that these services meet or exceed best practices. The incubator outposts not only provide a physical setting, but also offer businesses a unique connection to the University of Arizona.



Jessa B. Turner develops and executes communication strategies that promote and publicize Tech Parks Arizona and its units: UA Tech Park, UA Tech Park at The Bridges, and the UA Center for Innovation. She has helped to advance Tech Parks Arizona for 18 years primarily through the promotion of university-based economic development activities. She is a graduate of the Greater Tucson Leadership (GTL) and is on the GTL board of directors. Turner is an active member of Public Relation Society of America and serves as the Southern Arizona Chapter president. She can be reached at jbturner@uatechpark.org.





Ambr Grading

[Ambr](#) is a collector-card authentication and grading company for trading card games (TCG) like Magic: The Gathering and Pokémon. University of Arizona Center for Innovation client since 2021.



Anar Solar

Anar Solar delivers on the promise of solar energy through innovative applications of its patented racking and ballast system that take advantage of its rapid deployment, low-impact, and portable properties. University of Arizona Center for Innovation client since 2022.



Aux Motors

[auXcar](#) delivers extremely fast & affordable roadside assistance with our mobile app by offering a network of local repair drivers who provide mobile battery jumpstarts, flat tire repair, emergency fuel delivery and more. University of Arizona Center for Innovation client since 2022.



Better Solar

Better Solar LLC provides customized software solution for detecting defects in solar cells using electroluminescence (EL) images. University of Arizona Center for Innovation client since 2022.



BFC Med

BFC Med is dedicated to improving patient experience in the hospital by revolutionizing communication between patients and their healthcare providers via a mobile healthcare application. University of Arizona Center for Innovation client since 2021.



Black Labs

[Black Labs, LLC](#) will be a venture into the agribusiness space focusing on the analytical data utilizing Artificial Intelligence and Machine Learning to drive faster results for our customers. University of Arizona Center for Innovation client since 2020



Carbeniumtec

[Carbeniumtec](#) enables the green-energy future with our safe, scalable organic redox-flow battery for long-duration storage. University of Arizona Center for Innovation client since 2022.



Cellstate Biosciences

[Cellstate Biosciences](#) works with clients developing cell-based assays to follow the changes in cellular targets that characterize a disease, identify a physiological process, or explain the wanted and unwanted actions of a drug. University of Arizona Center for Innovation client since 2021.



CGA

CGA is a cell engineering and gene editing company focused on providing the highest quality technology and services to our partners and clients. University of Arizona Center for Innovation client since 2022.



Cibus21

[Cibus21](#) Retrofit Technology reduces Diesel Usage and Emissions by 20% in existing trucks. University of Arizona Center for Innovation client since 2022.



CleanFi

[CleanFi](#) provides contractors and building owners & managers instant qualification of a project's location for Commercial PACE financing, then delivers multiple proposals from competing funders for funding terms up-to 30 years. University of Arizona Center for Innovation client since 2021.



Clear Core

[Clear Core](#) gives financial institutions access, clarity, and insight into their data to better serve their members, strengthen their communities, and reach their strategic goals. University of Arizona Center for Innovation client since 2019.



Contract.One

[Contract.One](#) is the future of negotiations and collaborative contracting. It eliminates bottlenecks, speeds up the workflow and brings clarity and focus for more meaningful and satisfying contract work. University of Arizona Center for Innovation client since 2022.



Copperhead Aeronautics

[Copperhead Aeronautics](#) is an aerospace start-up focusing on creating vertical lift technology that is more energy efficient than current rotors or fixed pitch propellers. This increased efficiency translates to an increased aircraft payload while reducing noise and increasing top speed. They use the latest research and materials in order to produce previously impossible drones and aircraft. University of Arizona Center for Innovation client since 2019.



Cytoart, Inc.

[Cytoart](#) is a biotech company that provides accurate and convenient detection solutions of CAR T-Cell development, quality control and clinical monitoring. University of Arizona Center for Innovation client since 2020.



Desert Pearl Mushrooms

[Desert Pearl Mushrooms](#) is a gourmet and medicinal mushroom farm, that is dedicated to developing low water sustainable agriculture to the arid American Southwest. University of Arizona Center for Innovation client since 2020.



Dimensional Energy.

[Dimensional Energy](#) gives CO2 new life as a cost-effective building block for industrial fuels and consumer products traditionally made from fossil carbon. University of Arizona Center for Innovation client since 2022.



DO Energy

[DO Energy](#) designs, manufactures, and operates innovative hybrid CSP cogeneration equipment providing Controlled Environment Agriculture operations a cheaper, carbon-free alternative to fossil fuels. University of Arizona Center for Innovation client since 2021.



Dwindle\$

Dwindle\$ services marketing through dwindling price auctions. University of Arizona Center for Innovation client since 2021.



EarthEn, Inc.

EarthEn will provide grid-scale, Energy Storage solution through our patent-pending Energy Pod, a sCO₂-based scalable, carbon-negative, energy storage solution that allows storage of excess energy from solar and wind for long and short durations. University of Arizona Center for Innovation client since 2022.



EcoBloc

[EcoBloc](#) sustainably protects assets from rodent destruction. Our ultrasonic rodent exclusion technology proactively changes rodent behavior and is a replacement for environmentally harmful chemicals. University of Arizona Center for Innovation client since 2021.



Emagine Solutions Technology

[Emagine Solutions Technology](#) is tackling the U.S. maternal health crisis with FDA-cleared handheld ultrasound and remote patient monitoring for pregnancy care to improve outcomes. University of Arizona Center for Innovation client since 2017.



Eternum Analytics

[Eternum Analytics](#) provides analytical testing services for cannabis ensuring the safety and potency of products for consumers. University of Arizona Center for Innovation client since 2022.

Gigstride

Gigstride is a company dedicated to improving mobility for everyone with a suite of revolutionary, patented devices that are designed to use the body's own structure and function to optimize gait. University of Arizona Center for Innovation client since 2022.



GRAV

[GRAV](#) is designing the next generation in control systems for gaming and beyond. We focus on leveraging innovative technology to create unforgettable user experiences, deliver greater control and deeper immersion. University of Arizona Center for Innovation client since 2022.



Harmonic Discovery

At [Harmonic Discovery](#), we are building a computational-experimental platform that enables the rational design of therapeutics that engage multiple selected protein targets. University of Arizona Center for Innovation client since 2021.



HexaFeast

HexaFeast pioneers novel ways to utilize insects to enhance sustainability, productivity, security, and safety in food systems University of Arizona Center for Innovation client since 2022.



Hipokratiz

[Hipokratiz](#) builds healthcare software products and services aimed at eliminating various systems and human inefficiencies to make healthcare more accessible, available & useful. University of Arizona Center for Innovation client since 2020.



INSiGENe

[INSiGENe](#) works with medical researchers, clinicians, and industry providing expertise in data science and proprietary algorithms to unlock disease and identify novel therapeutic targets from omics data. University of Arizona Center for Innovation client since 2022.



Integral Healthcare Solutions

Integral Healthcare Solutions

[Integral Healthcare Solutions](#) specializes in helping a broad variety of healthcare organizations, from the largest of health plans to the smallest of specialty pharmacies, to achieve accreditation. University of Arizona Center for Innovation client since 2019.



J.H.O. Enterprises

Perspective matters ... so, come grow with [J.H.O. Enterprises](#) and our AVCS—Automated Vertical Carousel System! University of Arizona Center for Innovation client since 2021.



LabPair

[LabPair](#) helps scientists transform underutilized resources into productivity and publications. University of Arizona Center for Innovation client since 2020.



Leap Photovoltaics

[Leap Photovoltaics](#) is developing a revolutionary process to manufacture crystalline silicon solar cells without wafers, achieving the performance and reliability of traditional cells at half the cost using local supply chains in order to leapfrog the barriers of supply chain disruption and thin margins that hold back growth needed in solar manufacturing to meet climate goals. University of Arizona Center for Innovation client since 2022.



Leaptran

[Leaptran](#) is a data analytics company that develops software solely for the purpose of enabling intelligent control of distributed energy resources (DERs) such as renewable energy and battery energy storage. University of Arizona Center for Innovation client since 2022.



Longan Vision

[Longan Vision](#) designs and manufactures ruggedized Augmented Reality Technology for first responders, to help perform tasks safer and save lives faster. University of Arizona Center for Innovation client since 2021.

MakerLisp

MakerLisp

[MakerLisp](#) makes small computer hardware and software products that are inexpensive and work well. University of Arizona Center for Innovation client since 2022.



Metfora

[Metfora](#) is developing a blood test that dramatically shortens the time to diagnosis for a range of chronic diseases. University of Arizona Center for Innovation client since 2022.

MIND|READY

MindReady

[MindReady](#) provides port psychology coaching and education for today's athletes. University of Arizona Center for Innovation client since 2022.

Nature's Cooling solutions

Nature's Cooling Solutions

[Nature's Cooling Solutions](#) uses fresh filtered outside air to efficiently ventilate, heat and cool. University of Arizona Center for Innovation client since 2020.



NeoLight

At [NeoLight](#), we engineer and design empathy-driven solutions for newborns in need of neonatal medical care. University of Arizona Center for Innovation client since 2022.



NeuroVascular Research and Design

[NeuroVascular Research and Design](#) is developing an automated method to monitor the functional integrity of neurological and vascular structures that are at risk during high-risk surgery. University of Arizona Center for Innovation client since 2020.



NeuTherapeutics

NeuTherapeutics is a clinical-stage pharmaceutical firm pioneering the first regenerative therapeutics and preventative therapies for neurodegenerative diseases. University of Arizona Center for Innovation client since 2022.



NOAH LLC

[NOAH LLC](#) is a technology and water consulting company. Its patented system, which directly combines data streams with artificial intelligence, formal optimization, and other modeling methodologies constitute the most advanced decision support system in the world for water resources management. University of Arizona Center for Innovation client since 2017.



Nymbus

The patented [Nymbus](#) Smart Concert platform enables musicians and live music brand sponsors to transform one-time audience interactions into long-term relationships, increased social engagement and recurring passive revenue. University of Arizona Center for Innovation client since 2021.



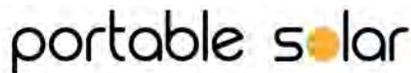
Paramium Technologies LLC

[Paramium Technologies](#) makes precision, freeform curved metal panels. University of Arizona Center for Innovation client since 2021.



PHusis Therapeutics

[PHusis](#) delivers precision medicines for the treatment of cancers. University of Arizona Center for Innovation client since 2022.



Portable Solar

[Portable Solar](#) produces ground-based solar kits that can be assembled by anyone, connected by an electrician, and are half the cost of rooftop solar. University of Arizona Center for Innovation client since 2022.



Precision Epigenomics

[Precision Epigenomics](#) is a clinical-stage precision medicine biotechnology company taking on important diagnostic challenges for cancer patients. University of Arizona Center for Innovation client since 2020.



ProfiKomp North America

ProfiKomp North America offers innovative organic waste processing technologies utilizing semi-permeable membranes. University of Arizona Center for Innovation client since 2022.



QScint Imaging Solutions

[QScint Imaging Solutions](#) manufactures quantitative, single-particle digital autoradiography systems for radiochemistry geology or geochemistry applications. University of Arizona Center for Innovation client since 2022.



R&D Lab

R&D Lab is re-creating the Roofing Industry for PV energy. University of Arizona Center for Innovation client since 2021.



Raster Report

[Raster Report](#) protects lives, assets and resources through satellite-based, multispectral analysis for wildland fire mitigation. University of Arizona Center for Innovation client since 2022.



RCAM Technologies

[RCAM Technologies](#) is accelerating the energy transition by using 3D concrete printing to support local economies and make renewables cheaper. University of Arizona Center for Innovation client since 2022.



RED SEA FARMS

Red Sea Farms

[Red Sea Farms](#) provides climate-smart technology to enable sustainable agriculture in harsh environments. University of Arizona Center for Innovation client since 2022.



Reglagene

[Reglagene](#) is a preclinical stage oncology therapeutics company developing new medicines that fight cancer safely. University of Arizona Center for Innovation client since 2017.

Reparvi

Reparvi is developing the Cell Repair Engineering™ platform to enable advanced mammalian cell-based engineering through gene delivery. It will initially be deployed to construct engineered bioparticles (VLPs) as a new generation of vaccine candidates effective in shaping the immune response to overcome the challenge of emerging pathogens that have a capacity for immune evasion. University of Arizona Center for Innovation client since 2020.



Resonant Energy

[Resonant Energy's](#) mission is to use solar projects to build wealth in under-invested communities. University of Arizona Center for Innovation client since 2022.



Revolute Robotics

[Revolute Robotics](#) introduces the first data collection robot capable of aerial and ground mobility. University of Arizona Center for Innovation client since 2021



Rise RX

[Rise RX](#) is developing novel therapies for the treatment of neurodegenerative disorders. University of Arizona Center for Innovation client since 2021.



Sarinx

Sarinx is developing a next generation industrial automation platform with the vision of CO2 emission reduction indirectly through power systems & load equipment optimization. With innovative automation concepts using power electronics, drive controls, IoT and cloud computing technologies, Sarinx will help industrial & commercial customers to accelerate their digital transformation goals. University of Arizona Center for Innovation client since 2022.



SGNT

[SGNT INC](#) is dedicated to significantly reducing the financial loss and brand damage caused by counterfeiting and tampering through integrating our innovative tamper-evident technology into container security products and packaging solutions. University of Arizona Center for Innovation client since 2019.

SolarSpace

[SolarSpace](#) is developing the next generation of concentrated solar power (CSP) technology. University of Arizona Center for Innovation client since 2021.

Souvie Biodelivery

[Souvie Biodelivery, LLC](#) is a drug delivery development company that employs nanotechnology to engineer, patent, and market novel drug delivery platforms to drug delivery niche markets. University of Arizona Center for Innovation client since 2018.

Stackhouse

[Stackhouse](#) is a real estate startup democratizing the industry by providing a new entry point for homeownership in downtown cities. University of Arizona Center for Innovation client since 2020.

SunMoksha

[SunMoksha International](#) is developing a Microgrid Controller & Software to take the microgrids mainstream. University of Arizona Center for Innovation client since 2022.

Sylvan Source

[Sylvan Source](#) provides industrial-municipal water treatment plants and thermal energy recovery systems with superior energy efficiency, fewer points of failure, and up to 50% lower CapEx and OpEx. University of Arizona Center for Innovation client since 2020.

Takht-e-Jamshid Electro-Industries

DCTREX Power Electronics offers electric energy conversion with reliable and high performance products and innovative solutions.

Techletics

[Techletics](#) is developing mobile health tools to be delivered at scale through smartphone devices. Our first commercial product is designed to address neck and back pain associated with “Tech Neck” using a smartphone application that analyzes and tracks the posture of users, without any external device. University of Arizona Center for Innovation client since 2020.

Tectonicus—Solar River

[Tectonicus](#) is covering and powering canals with Solar Energy. University of Arizona Center for Innovation client since 2022.

TG Recycling

[TG Recycling](#) is a tech startup with innovative technologies to recover valuable and toxic metals from renewable energy wastes including solar panels, wind turbines, and electric vehicles. University of Arizona Center for Innovation client since 2022.



TheraCea Pharma LC

[TheraCea](#) is a biotechnology company with a focus on developing fast and high-yield chemical processes for the preparation of diagnostic agents for biomedical imaging. University of Arizona Center for Innovation client since 2020.



uPetsia

[uPetsia](#) is making dog breath as good as your dog. University of Arizona Center for Innovation client since 2021.



US Air Tech

[USAT](#) develops cost-effective Satcom technologies that enable and promote “global connectivity,” servicing the planet including remote/inaccessible areas and disadvantaged communities. University of Arizona Center for Innovation client since 2021.



Valley Fever Solutions

[Valley Fever Solutions](#) focuses on improved therapeutics particularly for Valley Fever and other deadly fungal diseases. University of Arizona Center for Innovation client since 2021.



Whalen Enterprise

[Whalen Enterprise](#) is a consulting firm that helps organizations align Risk Management Framework, with Governance, Risk, and Compliance strategies reducing waste, synthesizing threat intelligence and achieving objectives. University of Arizona Center for Innovation client since 2022.



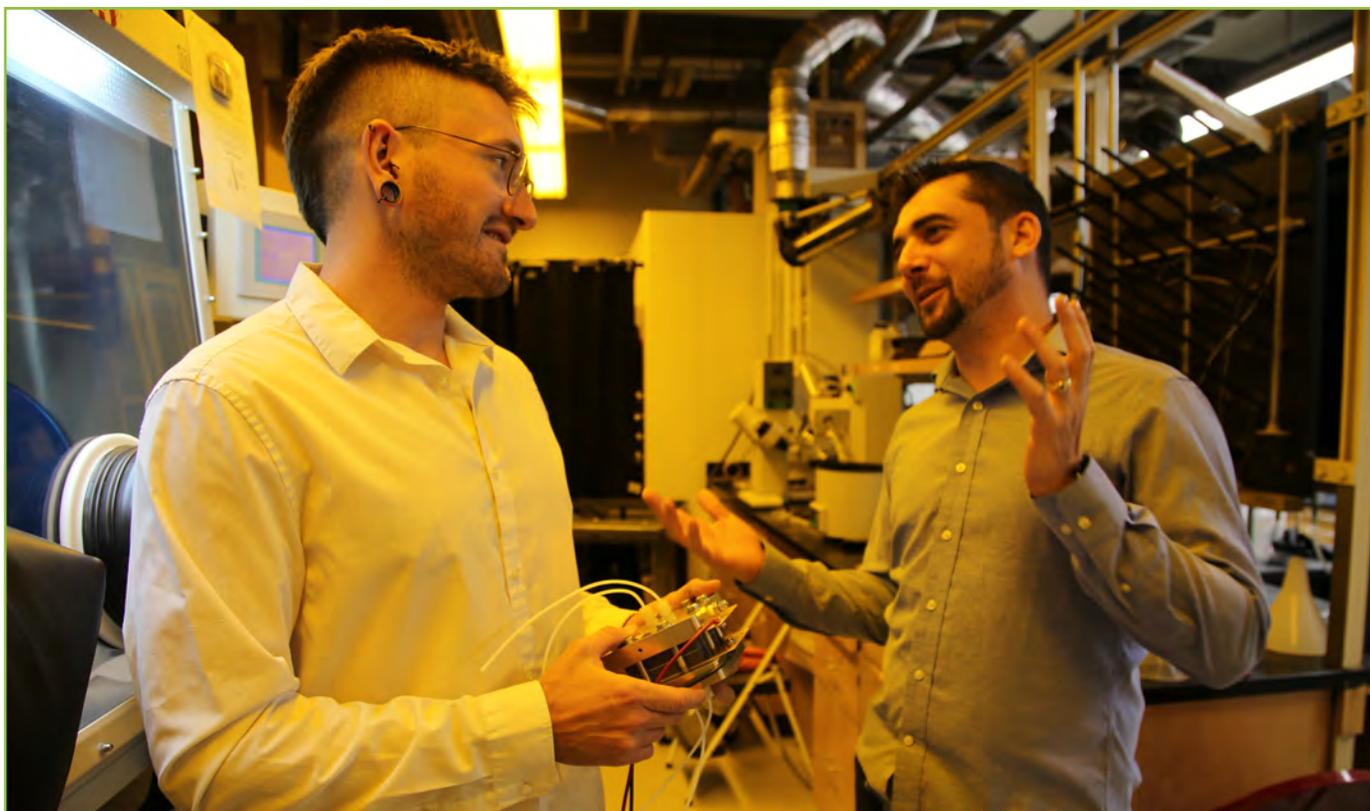
WiseBites

[Wise Bites](#) is a manufacturer of Plant based healthy snacks, free from the top 11 food allergens. As well as being Vegan, Gluten Free, Non-GMO, and Kosher, our products are all made with increased protein, fiber, and minerals and reduced levels of sugar, and sodium. Wise Bites is the ‘Smart Snack for Smarter Snackers’. University of Arizona Center for Innovation client since 2022.



XTRACT

[XTRACT Inc.](#) is a biotechnology company that produces innovative plant and fungal-based ingredients for manufacturers focused on health and wellness. University of Arizona Center for Innovation client since 2022.



TLA CarbeniumTech-25: (Left to right) Jules Moutet and Thomas Gianetti, researchers and inventors, discuss the redox flow battery technology they invented, which is now the foundation of UArizona startup CarbeniumTec. Photo credit: Paul Tumarkin/Tech Launch Arizona

The University of Arizona is a powerhouse of research and innovation. In fiscal year 2021 alone, the university supported \$761 million in world-class research activity. This research spans all the university's fields of investigation—from medicine to engineering to optical sciences to microbiology and beyond.

What happens to the results of that investigative work? In addition to research papers published in scholarly journals, researchers and innovators across campus often develop inventions that can impact the lives of people around the world. They may develop a new research tool or a new medical device or a new drug therapy or software. But how do the fruits of such innovative work—these inventions—make it out into the public domain? How does a new therapy for Alzheimer's disease or new laser or a novel method for early-stage cancer detection invented in a UArizona laboratory move into the marketplace?

The university has a department dedicated to the process of creating impact from these inventions: [Tech Launch Arizona](#) (TLA). The team at TLA, consisting of experts in everything from deep technology to contract and patent law to entrepreneurship and marketing, works with university inventors every day to identify inventions, protect intellectual property (IP) for these inventions in the form of patents, copyrights, and other kinds of IP, and market and license these inventions to startups and companies that can take

them forward into the marketplace.

And the impact the office is generating is not only measurable, but substantial. This past fiscal year, between July 1, 2021, and June 30, 2022, TLA recorded 303 novel inventions that came out of work at UArizona—the most invention disclosures registered for a single year in the university's history—up from 274 in the previous year. TLA, which is celebrating its 10-year anniversary this year, also filed 389 patents for new inventions and received 87 issued patents for technologies that had been filed in previous years. It executed 116 licenses and options for UArizona technologies and launched 10 startups, which, for TLA's purposes, are defined as companies formed specifically to bring UArizona inventions to the world where they can create jobs and produce economic impact for Arizona.

That impact has been both measurable and plentiful. In May, TLA released the results of its recent economic impact report, which indicated that startups and business generated through the office supported over 2,500 jobs and \$561 million in labor income between fiscal years 2017 and 2021, and produced over \$1.6 billion in economic activity during that time. Since the formation of TLA a decade ago, the number of UArizona startups has nearly tripled, from 73 to over 200. Additionally, in the past eight years, UArizona startups have raised more than \$600 million in grant and equity

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TLA Open House: (Left to right) Wilma Wildcat, University of Arizona Sr. Vice President for Research and Innovation Elizabeth “Betsy” Cantwell, Wilbur Wildcat, and Associate Vice President of Tech Launch Arizona Douglas Hockstad at the opening of Tech Launch Arizona’s new offices at The Refinery at the UA Tech Park at The Bridges. Photo credit: Paul Tumarkin/Tech Launch Arizona



Colleen Janczak, former University of Arizona research scientist and Chief Operating Officer of Scintillation Nanotechnologies, a startup she helped launch based on an invention she co-developed. Photo credit: Paul Tumarkin/Tech Launch Arizona

funding, an indicator that startups are attractive to outside investors who trust they are well-positioned for successful futures.

Those startups cover a full range of technical fields. Reglagene was founded to commercialize new cancer therapies developed in the College of Medicine–Tucson and the BIOS Institute. Avery Therapeutics is bringing to market a tissue-engineered heart graft to treat heart failure, also developed in the College of Medicine–Tucson. And most recently, CarbeniumTec is a startup advancing a redox flow battery technology for long-duration energy storage in utility, commercial, and residential applications developed in the Department of Chemistry and Biochemistry. All of these companies have taken advantage of the multiple services and entities supporting the growing southern Arizona innovation ecosystem—services like those provided by TLA and the UArizona Center for Innovation incubator at Tech Parks Arizona.

“Following on the release of our latest impact numbers demonstrating the effect we’ve had in the community, we’re excited to have had such a strong year,” said TLA Associate Vice President Doug Hockstad. “It shows that we’re continuing to increase the mindset of inventors on campus. All of this inventive activity keeps the pipeline strong so we’ll be able to continue to grow our impact in the coming years.”

Inventions represent the raw material for that pipeline, and each invention is refined, protected, marketed and licensed before it is available to consumers.

“The ability to connect meaningfully with communities and create a brighter future for all is integral to our land-grant mission,” said Elizabeth “Betsy” Cantwell, senior vice president for research and innovation. “As we see with this year’s University of Arizona-based inventions and startups, commercialization serves as a powerful bridge between university research and innovation and real-world impact in our state and our communities.”

The University of Arizona is ranked number 28 among the top 100 worldwide universities with the most U.S. patents granted for

inventions in 2021, according to the National Academy of Inventors and the Intellectual Property Owners Association, which collaborate to produce the list.

The rankings are based on utility patents issued between Jan. 1 and Dec. 31, 2021. During that period, the university had 86 patents issued, five more than in 2020. In 2018, UArizona ranked No. 66, then rose to No. 39 in 2019, and to No. 28 in 2020—the ranking it continues to have today.

Among the university’s patented inventions in 2021 were a plant-based antimicrobial food and hand sanitizer, a falloposcope device for ovarian cancer detection, and an implantable trifocal lens that allows patients requiring cataract surgery to see near, middle and far distances. The university licensed the trifocal lens to health care company Alcon, and it has now been implanted in over 1 million cataract patients.

In fact, the inventor of that lens, Professor Jim Schwiegerling of the James C. Wyant College of Optical Sciences, ended up getting cataracts and had his own invention implanted in his eye. He says he sees better now than when he was a kid.

Now that’s impact.

Anyone looking to learn more or get involved should contact Paul Tumarkin, Assistant Director of Marketing & Communications, Tech Launch Arizona, pault@tla.arizona.edu.

120+ Tech Launch Arizona Startups

- Provision Recognition, LLC
- Innovative Energetics, LLC
- Metropia, Inc.
- RapidBio Systems, LLC, a Destech Company
- Dataware Ventures, LLC
- SinfoniaRx, Sinfonia HealthCare Corp.
- XTRONAUT Enterprises
- Illustrative Mathematics

Codelucida, LLC
 Teleost Biopharmaceuticals, LLC
 Acomni, LLC
 Science of Sport
 CCW-UA LLC
 Invenio Imaging Inc.
 Angiomics, Inc.
 Iron Shell, LLC
 Neuro-ID, Inc.
 ThinkShare Technology, Inc.
 Glycosurf, LLC
 Anivax, Inc.
 Epidemiology Risk Mgmt., LLC
 Synactix Pharmaceuticals, Inc.
 Arizona Handbooks, LLC
 ProNeurogen, Inc.
 KKC Engineering, LLC
 EPV Sensors, LLC
 TetraGene, LLC
 Airy Optics, Inc.
 Caltrode, Pte. Ltd.
 MetOxs Electrochemicals Pte. Ltd.
 Yumanity Therapeutics, Inc.
 Akhu Therapeutics, Inc.
 Promutech Pharmaceuticals, Inc.
 Hedgesmart, LLC
 Knowmad Technologies, LLC
 Anivive Lifesciences, Inc.
 Horizon Biotechnologies, LLC
 Language Canvas, LLC
 Sharing Tribes, LLC
 Filmstacker, LLC
 Nanosonic Bioreagents
 VAP Media, LLC
 MAGPI, LLC
 Entemia, LLC
 Coherent Light Science, LLC
 T-Photonics, Inc.
 Acrete Pte LLC
 Palo Verde Networks, Inc.
 Catalina Pharma, Inc.
 Desert Saber, LLC
 Avery Therapeutics, Inc.
 Fishtail Technologies, LLC
 Helm Technologies, LLC
 Lum.AI, LLC
 Lunewave, LLC
 Reglagene, LLC
 Omniscient, LLC
 Regulonix, LLC

Urbix Resources, LLC
 FreeFall Aerospace, LLC
 Botanisol Analytics, Inc.
 Aqualung Therapeutics Corp.
 D3Sciences
 Guia, LLC
 Triangle Biotechnology, Inc.
 Illuminos Therapeutics LLC
 MCR Therapeutics, LLC
 Discern Science International, Inc.
 Intuitive Measurement Systems, LLC
 GenetiRate, LLC
 Norcon Technologies, LLC
 Xoralgo, Inc.
 Fibronox, LLC
 Sidecar Learning LLC
 EARDG Photonics, Inc.
 Precision Epigenomics, Inc. (Formerly DesertDX, LLC)
 Clean Earth Tech, LLC
 iCrx, Inc.
 Procyon Technologies LLC
 Scintillation Nanotechnologies LLC
 Extreme Cer-Nano, LLC
 Intelico Therapeutics, LLC
 QScint Imaging Solutions, LLC
 ThrooHealth, LLC
 MediCarbone, Inc.
 DeUVe Photonics, Inc.
 Wavelength Unlimited Technologies, Inc.
 CThru Lasers, Inc.
 ElectroSonix, LLC
 Pierce Allen Pharmaceuticals, Inc.
 Fontana Systems, LLC
 Cancer Cures Worldwide LLC
 SaiOx, Inc.

CMLaser Technologies, Inc. Hipokratiz LLC
 SolarSpace LLC (formerly Gen3 LLC)
 Grafite Logic, Inc.
 TheraCea Pharma LLC
 SibylSoft, Inc.
 GenetiRate 2, LLC
 Auxilium Technology Group LLC
 RaeSedo, LLC
 LivEndocrine, LLC
 AlgaeCell, LLC
 Patmos Therapeutics, Inc.
 Paramium Technologies LLC
 PARMedics, Inc.
 Module Therapeutics, Inc.
 Sunrise Human Technology LLC
 uPetsia, Inc.
 Luxxon Therapeutics LLC
 Revolute Robotics, LLC
 Lean Life Sciences, Inc.
 MeCo Diagnostics, LLC
 NightRighter, Inc.
 PhytoCentric Solutions, LLC
 NEUTherapeutics, LLC
 BacVax, Inc.
 BG Networks, Inc.
 Clade Therapeutics, Inc.
 MetFora LLC
 FAKnostics, LLC
 Fringe Metrology LLC
 CarbeniumTec LLC
 CoreA Therapeutics, Inc.
 Arizona Assist, LLC
 Teleport Pharmaceuticals, LLC
 Gloss Institute, Inc.
 Norcon Technologies Holding, Inc.

Paul Tumarkin, Assistant Director, Marketing & Communications develops and executes TLA's marketing strategies, managing the organization's web and social media presences, and works with TLA leadership to help the organization extend its reach both into the UA community, as well as out to the greater business community. As a member of the greater UA ecosystem, he also participates in various university-wide marketing, branding and communications initiatives. He can be reached at PaulT@tla.arizona.edu.



UPCOMING EVENTS

November Industry Events

Sunshine Mile Unveiling | October 27, 9:00AM–11:00AM | 1105 E. Broadway (NEC Broadway and Fremont) The City of Tucson Mayor Regina Romero, Council Member Richard Fimbres, Council Member Steve Kozachik, the Regional Transportation Authority, the Tucson Department of Transportation and Mobility, Rio Nuevo and the Sunshine Mile invite you to celebrate the completion of the Broadway Improvement Project from Euclid Avenue to Country Club Road.

TENWEST Impact Festival | November 3, all day | Tucson Convention Center Tucson is invited to watch finalists pitch their businesses as part of Idea Funding 2022, day three of TENWEST. For more information and to purchase tickets to attend TENWEST and IdeaFunding, visit [the festival site](#).

Southern Arizona CCIM Chapter & CREW Tucson Game Night and Happy Hour | November 3, 4:00PM–7:00PM | The L Offices, 1860 E. River Road, Suite 325 More information and registration [here](#).

Southern Arizona CCIM Chapter November Monthly Lunch Meeting | November 8, 11:30AM–1:00PM | DoubleTree Reid Park, Bonsai Room Jed Gold, CFO Mister Car Wash, will present “How Mister Car Wash Became the Nation’s Largest Car Wash Company Washing One Car at a Time.” More information and registration [here](#).

2022 Governor’s Celebration of Innovation Awards + Tech Showcase | November 8, 4:00PM–8:30PM | Phoenix Convention Center, 100 N. 3rd St. West Building, 3rd Floor Arizona Technology

Council, in partnership with the Arizona Commerce Authority, honors technology leaders and innovators from across the state with a night of networking, dining and entertainment at the Governor’s Celebration of Innovation Awards. The event will consist of a Tech Showcase followed by a theatre-style awards program. Companies featured at the Tech Showcase consist of award finalists, sponsors and Council partners. More information and registration [here](#).

Pima County Real Estate Research Council’s Quarterly Meeting | November 17, 2022, 7:30AM–10:00AM | Tucson Association of Realtors, 2445 N. Tucson Blvd. Sara Baker of Baker, Peterson, Baker & Associates will present data from market study programs on multifamily, build-to-rent, and casita concepts. More information and registration [here](#).

Interface 2022 | November 17, 10:30AM–11:30AM | Tucson Metro Chamber | 212 E. Broadway Blvd. Interface provides business owners and executives with opportunities to speak directly to high-level public officials about public policy and doing business in Southern Arizona. More information and registration [here](#).

SAVE THE DATE! CREW Tucson Luncheon | November 17, 11:30AM–1:00PM | Culinary Dropout More details available soon [here](#).

REMEMBER to check out upcoming events of interest to the southern Arizona real estate and business community on the TREND report’s [website](#). If you would like to promote your organization’s event on our site, email us at TrendReportAZ@outlook.com with details!

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Founder and Professional Advisor to TREND report