Why Us?

The role of a leader of innovation is not to set a vision and motivate others to follow it. It’s to create a community that is willing and able to generate new ideas.

-Harvard Business Review-
Welcome Letter

I may have the best job in the world! The innovators like those featured in the 2021 Innovation Hub Annual Report are helping rebuild our economy and inspire the future. My team and I are filled with gratitude because each year we work with hundreds of entrepreneurs, passionate community partners, innovative industries, the Lubbock Economic Development Alliance, the City of Lubbock and our region’s economic development organizations to make an impact.

Our startups since 2017 have collectively generated $54M of impact to our region through revenue generated, capital attracted, and grants supporting commercialization activities. In 2021, startup impact was $18.5M in investment, 207 employees, and 81 IPRs (including patents, copyrights, and trademarks) creating value for our economy. In this report we highlight the innovation and entrepreneur stories of new venture creation. We have woven into the fabric of the innovator’s story with our programs in 1) Ideation, 2) Commercialization, and 3) Acceleration. The programs are foundational to support the businesses that serve as the engine for economic growth. Our local innovators and entrepreneurs are in the driver’s seat with the support and guidance of our volunteers, the Texas Tech Research Park Board and ITU mentors, who provide countless hours of know-how. Our community is our “superpower” in West Texas. Our startups are headed for great accomplishments. We’re proud to support them with programs, seed funding, mentorship, and sustainable infrastructure now and always.

Our new normal will be helping the underserved and underrepresented as well as adjust to helping our entrepreneurs to address new markets and new needs as we overcome challenges propelling them to new heights. A new program we added this year is the Seraph Hub Fuel Fund, our first venture fund, find details on page 16. Each year we release this annual report to reflect on the innovator and entrepreneur journey, we feature their stories and how their ideas are changing our world and making it better.

Finally, we welcome our new version of the Commercialization Roadmap highlighted on page 8 & 9. The team has reimagined how we think about great ideas and developed the Red Raider “COMMERICALIZATION ROADMAP 2.0.” The ITU/HSC leadership and Innovation Hub team have added healthcare innovations to the resource to assist healthcare professionals, healthcare students and anyone interested in developing ideas in medical device, diagnostics, and digital health. Thank you to everyone contributing to the success of our innovators and entrepreneurs, they are enjoying the journey!

Sincerely,  

Kimberly Gerfin
Associate Vice President of Innovation and Entrepreneurship
The CHALLENGE
Developing the innovation ecosystem. How can the Texas Tech Innovation Hub support entrepreneurs and small businesses.

Our MISSION
To support and catalyze ideas that impact and benefit our world.

Our SOLUTION
Creative collision, the integration of research tech transfer, new venture creation, company growth, support, and competitive funding.

Jobs created annually by small companies: 1.5 MILLION

Microbusinesses in the U.S. with less than 10 employees: 3.7 MILLION

Of the business population represents small & medium size business: 90%

Inspiring Inventorship
The Office of Research Commercialization strives to protect our Research Commercialization
Red Raider inventors and help to market those technologies on behalf of the Texas Tech University System.

Entrepreneurship Education
The Innovation Hub provides entrepreneur programming for Faculty, students, alumni, and the community. Programs support idea generation and the development of company formation and initial funding.

Small Business Development
Northwest Texas Small Business Development Center provides consulting, training, and research to small business owners and entrepreneurs.
Our 2020 Annual Report introduced the Commercialization Roadmap, a tool for entrepreneurs to be in the driver's seat of their idea. This year we are introducing version two of the roadmap that includes TTUHSC resources. All markers along the map help the entrepreneur and researcher be proactive in the development of their idea and determine the best route for success.

Find the roadmap at: www.depts.ttu.edu/research/research-partnering
Drivers of **COMMERCIALIZATION & INNOVATION**

**AGRICULTURE**
- 14% of R&D funding for TTU & TTUHSC
- Largest driver of private funding for research at TTU
- Texas Tech ranks 2nd in the state for total R&D funding

**HEALTHCARE**
- 15% of total employment in Lubbock
- TTU ranked 9th in the State of Texas for healthcare R&D funding
- 27% of total R&D funding for TTU & TTUHSC

**ENERGY**
- 15% of total employment in West Texas
- Fastest growing industry in West Texas
- 750 new jobs created in the past 5 years

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**AGRICULTURE**
**HEALTHCARE**
**ENERGY**

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**TEXAS TECH’S RESEARCH STRENGTHS AND THE ECONOMIC BASE OF LUBBOCK**
Annual Impact 2021

- $18.5M Startup Investment
- $18.3M Federal & Internal Grants awarded to startups
- 180 Events at the Hub
- $726K Media Hits
- 5.1M NSF I-Corps funding (14 teams)
- $300K Entrepreneurs & Innovators Supported
- 20,001

4-Year IMPACT Cumulative Since 2017

- $54.1M Startup Investment
- 934 Events at the Hub
- $3.7M Federal & Internal Grants awarded to startups
- 19.2M Media Hits
- $2M NSF I-Corps funding (60 teams)
- $300K Entrepreneurs & Innovators Supported
- 64,257

The Hub Team:
Kevin Fair,iphia Williams, Nothum Styles, Kimberly Guinn, Ganga Baskar & David Donsett
Texas Tech Research Park, Inc.

Established in March 2020, Texas Tech Research Park, Inc. (TTRP) set out to create an Innovation District in Lubbock. The visioning for the innovation district began with the Innovation Hub as the first building and was constructed in 2014 and opened in fall 2015. The Innovation Hub, a Texas Tech University initiative, is now a broader mission for an innovative entrepreneurial ecosystem that will bring together and benefit all components of the TTU System and the West Texas community.

In the beginning months of the Innovation Hub’s opening, a visioning task force was created to determine what the innovation district could become.

Less than four years later, TTRP was established, and a board of directors was created to embark on the collaborative endeavor to bring the innovation district to life.

The 501(c)(3), enables the TTRP Board of Directors to engage and recruit industry that will create job opportunities for our Red Raiders and for our community. The TTRP Board brings expertise to the table to help our students, faculty, and community compete in the global marketplace. The TTRP board is positioning Texas Tech Research Park Inc. to better support economic growth, innovative industries in West Texas, and foster a startup community.

TTRP Board of Directors

"The TTRP Board members are some of the brightest minds and some of the most experienced individuals that dovetail perfectly into what we’re trying to accomplish."

– John Esparza, TTRP Board Chairman & President

Board of Directors

Sanjeev Sosana
Curtis Griffith
Avin Agarwal
Laura Street

Christy McClendon
Jim Mesecar
Vince Pierce
Bonnie Clippard

Ex-Officio Members

Billy Braestrup
Kimberly Gramm
John Derwahl
Penny Hickey

Phil Zavin
Joseph Hoppert
Dan Pope
Noel Sloan
Q & A With THE SERAPH HUB FUEL FUND

1. What is the Seraph Hub Fuel Fund?
The Seraph Hub Fuel Fund is a Texas Tech University Innovation Hub initiative and provides access to capital in support of agriculture technology (Ag-Tech) startups in the West Texas region.

2. Who are the partners that support the fund?

3. How can the fund help support Texas Tech?
The Fund will be able to support Texas Tech’s effort in promoting the growth of agricultural research in the region by investing in agricultural technology and innovations to benefit farmers and producers.

4. What is the goal of the Seraph Hub Fuel Fund?
The goal is to fund early-stage startups. Many of these startups are commercializing technology, resulting in new business and job creation in a region where much of the state’s farmland and agriculture business need innovation to support the state’s growing economy. The Seraph Hub Fuel Fund is the first venture fund in West Texas. The initiative will undertake a five-step process including fund management, fundraising, marketing and sustainability modeling. The Fund anticipates funding 25-35 AgTech ventures, supporting more than 500 direct jobs.

5. How can Seraph Group’s model help fundraise?
Seraph Group was founded in 2004 by Tiff Yen, a UC Berkeley and Yale graduate and a former VC with Chase Capital Partners and Hambrecht & Quist. Seraph Group is one of the first micro-VC/seed funds in early 2000’s and invented the Structured Angel Fund™, a specialized fund designed specifically for ‘angel investing’. Seraph has a 15-year record of accomplishment, encompassing 10 funds, 106 investments, and 21 exits.
While you need to be fully committed to the business. Never leave your family or community behind. Always make sure you remember the most critical elements of your life - the ones you love and the people around you.

- Michael Ryan, Innovation Hub Mentor of the Year

"Collectively, these services led to a more expansive role in talent acquisition and management for our clients.

The couple began with a single airline company, then expanded to logistics, migrated into computers and networks, and provided web design and management services. In the mid-90s, Aptel scaled back on the use of outside consultants. We were unwilling to accept the significantly lower fees they were willing to pay, so we gradually withdrew from that aspect of the business. We maintained involvement with the small business community. This eventually led to my career in academia.

Giving Back
Mike teaches business management courses, with a focus in leadership and entrepreneurship, at the Jerry S. Baltes College of Business Administration. As a part of the committee engaged in forming the Innovation Hub, Mike Ryan became involved in the development of the lab’s programs. He received the Innovation Hub’s Mentor of the Year Award in 2021 for his dedication to supporting startups.

Throughout his academic career teaching and being a member of the lab’s community, Mike Ryan has realized what most entrepreneurs discover: success occurs in spite of our mistakes. The experiences with entrepreneurs throughout the community has impacted the way Mike has taught for the better.
Our **HOME**

**Our PROGRAMS**
- Workshops
- Startup Funding
- Incubator & Accelerator
- Discoveries to Impact Conference

**Our SPACE**
- Office & Conference Space
- 3D printing & Makerspace
- Event Space
- Innovation Stations

**Our STARTUP COMMUNITY**
- Hub Memberships
- Alum Network
- Industry Mentors
- Entrepreneur Socials

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*207 Hub Tenants & Accelerator Employees in 2021*

*81 IP Licenses in 2021 111 Cumulative since 2017*

*6 New TTU Startup Companies | 24 Cumulative since 2017*

*29 Hub Tenants & Members in 2021*

*Average Full Time Employee Salary $66,000*
Tenant Feature: GiSC

Today we are dealing with a wave of agriculture technology. Adoption of new technology is low but GiSC seeks to help bridge the gap between farmers and innovative technology.

— Billy Tiller, Co-Founder of GiSC

GiSC STORY:

Numbers, graphs, and models might seem boring to some, but in the agriculture industry, this data can be a key step in bridging the gap between traditional farming and modern innovation.

Billy Tiller, a 1986 Jerry S. Bowls College of Business graduate, discovered his passion for business while studying at Texas Tech University. “I love the idea of building a business from scratch,” Tiller said. “I have been involved either as an owner, partner, investor or consultant in dozens of businesses over the last 30 years. I can’t remember a time when I did not want to be involved in business.”

Tiller invested 10 years as an agricultural banker and was involved for 22 years in rural telecommunication companies that deploy cellular and internet services to customers. Now he’s using that experience to help bridge the gap between farming and innovation.

In late 2012, Tiller co-founded Farmer Information Services Cooperative (GiSC), where he currently serves as CEO. GiSC was formed to empower farmers to use the idea that data has value, and the future of agriculture would be best navigated by unlocking the power of business insights from accurate data.

The cooperative is owned by its patrons and members, which are farmers. Tiller explains that in the future these owners may include other cooperatives like marketing cooperatives, processing cooperatives, and input cooperatives which sell farmers fuel, seed and chemicals. GiSC designs and builds digital products that fill gaps between data insights and a farmer’s work for data to be effectively used.

Where is GiSC Today?

GiSC quickly realized that working with farmers across the United States presented numerous challenges. In 2016, Tiller and his team decided to focus their efforts in Nebraska’s Panhandle Natural Resource District. We become the lead partner in developing a Mobile Data Program for their farmers and the district which uses surface water from the North Platte and ground water from the Ogallala aquifer. GiSC contracted to measure irrigation pumping volume on over 500,000 acres and today we have over 445 of those farms signed into the program by farmers.

GiSC used existing IoT available to run all data streams on the 3,000 wells to create a daily water pumping record.

GiSC’s Future

When asked what is in store for GiSC’s future, Tiller stated, “We are focused solely now on how we can help farmers navigate the current landscape of water conservation and carbon sequestration. We hope to be in the middle of all of the discussions because there will be many farmer opportunities in the future with what can be validated data. Our next step will be in the design, development, and implementation of a virtual water market that will be underpinned with peer grade data for the creation of ‘water offsets’. It is an exciting time, and the opportunities are endless.”

Innovation in agriculture

“Innovation is important to agriculture as we try to increase productivity to feed a growing population,” Tiller said. “The agriculture industry must utilize innovation to become more sustainable and continuous improvement loop. Innovation over the last century, from the plow to the tractor and mechanized farming, has been unsustainable.”
Our PROGRAMS

Red Raider Idea Competition
Entrepreneurs submit a 60-second video on the next BIG idea and vie for public votes. The top voted video is awarded $2,000.

Hub Camp
Business plan workshops offered 7 times per year and essential for crafting a stellar business plan.

Faculty C-Startup
$2,500 grants awarded to faculty to support commercialization education. Faculty become ambassadors for the Innovation Hub and support entrepreneurship programs and events.

NSF I-Corps Program
This prestigious program enables scientists, engineers, and inventors to identify a product-market fit for inventions. Offered two times per year, and focuses on the business model canvas, customer discovery, and team development.

TTU Accelerator
The year-long program assists entrepreneurs to launch startups or discover licensing opportunities based on university research and patented technologies. Accelerator companies are awarded a $25,000 grant and have access to TTU co-working space and mentors.

ITTU Mentor Program
Industry mentors are chosen for their know-how, investment, and technical expertise, and network to aid in the launch of new enterprises.

Red Raider Startup
This exciting 5-day program focuses on idea generation, team formation, customer discovery, and pitching.

iLaunch Competition
This high-energy pitch competition is Texas Tech University’s very own Shark Tank™. A panel of industry experts decide who takes home the 1st place prize of $10,000.

Prototype Fund
Awards $50,000 to technology startups for creation of much-needed prototypes to test the market.

Seraph Hub Fuel Fund
The Seraph Hub Fuel Fund invests in seed-stage companies in high-opportunity technology markets with a focus on agriculture.

Presidents’ Innovation Award
The Office of the President of Texas Tech University and Texas Tech University Health Sciences Center award a total of $350,000 to startups to assist in equipment and office space at the Innovation Hub.

Discoveries to Impact
Week-long event that showcases the best of the best in research, innovation, engagement, and startups at Texas Tech and the West Texas Community.
Hub Feature: SURGIC

Surgic is the next major step in medical education technology for future health care providers and academic institutions.

I have always felt an innate entrepreneurial drive that I knew would one day manifest into a startup, irrespective of when or where.

– Travis Reiss, CEO & Founder of Surgic

SURGIC STORY:

Surgic’s surgical training device is the next big innovation in medical education. Travis Reiss, co-founder and CEO of Surgic, explains that “Surgic aims to substantially improve the educational toolkit available to medical residents.”

Surgic provides hospitals and surgeons the opportunity to practice procedures without the high cost of traditional cadavers, the company’s first product, which they aim to release in summer 2022, “will simulate and provide a training platform for minimal invasive procedures exclusively.”

Two founders, including Travis Reiss, formed their initial team in Dr. Paul Egan’s Mechanical Engineering Capstone. Dr. Egan is one of the Innovation Hub’s esteemed 2020-2021 Faculty Ambassadors.

Igniting the Entrepreneurial Spirit

Prior to pursuing his dream, Reiss began his college career at the Edward E. Whitacre Jr. College of Engineering. “I often felt that I was right where I was meant to be, amongst my engineering student peers, as we worked to solve problems together, step-by-step, and with precision, with all necessary information clearly described. The way of the engineer.”

It wasn’t until Dr. Egan’s class that Reiss’ entrepreneurial spirit was ignited. The capstone course-integrated entrepreneurship and engineering design. “It really motivated me early on and helped me recognize that I could pursue entrepreneurial endeavors as an engineer.” The project Reiss started in class with co-founder Kyle Ferrin, Dr. Egan’s background in healthcare, led the two mechanical engineers to Dr. Catharina Ronaghan, a surgeon and professor at the TTUHSC.

Finding the Right People

After several meetings with Dr. Ronaghan to discuss the limitations of current surgical training devices, Reiss and Ferrin launched the project through NSF I-Corps. “NSF I-Corps was hugely instrumental in pushing my group’s capstone project from the classroom and into prospective startup landscape. Following huge validation and encouragement during customer discovery, Kyle and I were brimming with excitement and ready to take this to the next level.” Surgic was formed on February 2nd, 2021.

Travis Reiss, Dr. Paul Egan, and Kyle Ferrin, with the guidance of Dr. Catherine Ronaghan, set their sights on Innovation Hub programs including the President’s Innovation Award and TTU Accelerator.

As Surgic began to grow through the team’s involvement in Innovation Hub programs, the team recognized they were missing a few key players. The mechanical engineers onboard Asham Siddiqui, a medical student and MBA, as Surgic’s CFO. Shortly after that, the team connected with Chris Ackerman, an engineering consultant and TTU alumnus. Surgic welcomed Ackerman as their CMO.

In full 2020, Surgic won the TTUHSC’s President’s $25,000 award. Spurred by the momentum of the win, the team competed in the 2021 Discoveries to Impact TTU Accelerator program and was accepted into the one-year program.

Equipped with a diverse team of mechanical engineers and business and medical professionals, Surgic aims to launch their minimum viable product (MVP) by next year.
**TTU Accelerator Startups**

**Campus Live**
A multi-platform collegiate media company with the goal of informing and engaging college fans of the exciting things happening at the schools they love.

**GoodLine Beer**
A hybrid production brewery and taproom focusing on providing equally high quality beers and taproom experience for the fine thirsty folks in Lubbock.

**Captivist**
An app providing customers detailed information and analysis of social and environmental impact to make informed purchasing decisions pertaining to the quality, environmental, sociological, and health of a product.

**PCOS Cist**
PCOS Innovation, LLC
A research proven based app solution to help woman diagnosed with Polycystic Ovary Syndrome (PCOS) that provides a nutrition guide, grocery list, recipes, BMI tracker, motivational videos and resources for support.

**Therapoints**
Aiding in the cognition of fine motor control, this treatment method helps people with cognitive difficulties regain functional capacity in their fingers.

**Class Companion**
CritiColl, LLC
An app solution that provides a stress-saving platform for professors with tools to promote academic success for students.
Hub Feature: OGALLALA GREENS

Team Members: Cory Roof - Founder & CEO & Austin Ochoa - CTO

Botanist and entrepreneur Cory Roof is dedicated to West Texas and the development of hydroponic farms. Over the past five years in the industry, Cory worked for Cloud City farm and Plenty Farms, two of the most advanced greenhouses in the world.

After arriving to West Texas with an idea and the experience to accomplish his dreams, Cory Roof was referred to the Innovation Hub from the Jerry S. Rawls College of Business and was accepted into the Texas State Accelerator program. Cory’s mission was to launch Ogallala Greens, a hydroponic farm system that caters to West Texas’ agricultural needs.

Lubbock’s main source of fresh water is the Ogallala Aquifer. In recent years, the aquifer has been heavily reduced from the strain of the key industry: agriculture. Due to the dwindling resource and the climate of West Texas, Lubbock imports much of its produce from the Rio Grande Valley and California. Ogallala Greens aims to change that.

The hydroponic farm system launched by Roof uses up to 95% less water than traditional farming methods but still grows exceptional produce. Ogallala Greens aims to ease the pressure on the aquifer while empowering West Texas to produce its own vegetables. Not only will the hydroponic farms work to lessen the toll of the water crisis, but due to the controlled environment of these greenhouses the food produced will be more flavorful and nutritious because of the ideal growing conditions.

Ogallala Greens’ produce will have a longer shelf life due to the produce being harvested locally. Locally sourced produce has a smaller carbon footprint from reduced transportation. In addition, no pesticides are used on the plants for growing leafy vegetables, a healthy alternative for consumers.

INTERVIEW WITH CORY ROOF

1. Why did you choose to develop Ogallala Greens?

Like so many of our natural wonders, the Ogallala is under threat due to misuse and climate change. In the near future the loss of this resource will affect our agricultural community as well as West Texas’ rapidly growing urban centers. Hydroponic farms like ours, use up to 95% less water than traditional farming methods, allowing us to ease the pressure on our precious aquifer while growing incredibly delicious food.

2. Tell me about your background and career in the Green Industry,

While I was beginning to scheme of the green housing business, I would one day build, I became quite interested in the developing technological capacity for hydroponics.

I found that a company called Plenty was hiring. In December I applied for the job and was rejected. In April of the following year, I found a Craigslist add for an employment agency looking to hire for a hydroponics company in Laramie, Wyoming. “Could it be?” I thought and applied for the job. Sure enough, this is how I got into a company that typically only hires Harvard and Stanford graduates.

In my two and a half years at Plenty, I managed over 180 experiments in their $20 million discrete grow space. I collected stock options, flew to San Francisco regularly to consult on a mega farm called 7gig.

3. What lead you to the Texas Tech Innovation Hub?

I moved to West Texas with a plan to start small and begin looking for investors. The business college directed me here since I am a member of the community, and I am so glad they did. The programs here have been an incredible experience, and our mentors have helped us identify the true potential inherent in our idea.

4. What are your goals for the future of Ogallala Greens?

Ogallala will be building facilities in Lubbock, Midland, Abilene and Amarillo. In the future we plan to expand northward into other mid-sized cities. These cities, like Topaz, Lincoln or Siouel Falls are growing rapidly and looking for health and lifestyle products that were once only available in larger cities. We want to provide nutritional and culinary options to these emerging markets.
Community IMPACT

1 Million Cups
Based on the notion that entrepreneurs discover solutions and engage with their communities over a million cups of coffee, 1 Million Cups (1MC) is hosted at the Hub once a month to educate and inspire entrepreneurs. Two startup companies are invited to present each month to gain insight and resources from other in the entrepreneurial community.

Red Raider Startup High School Program
The Innovation Hub partners with area school districts to host the Red Raider Startup High School Program. Students progress through a set of hands-on learning sessions that focus on ideation, team formation, customer discovery, and pitch workshops. The teams presented in front of an investor panel at the end of the 3-day event.

Lubbock Angel Network (LAN)
The Lubbock Angel Network provides angel funding and support capital for innovative startups in West Texas and beyond. LAN is the only form of privately organized capital for venture investing in Lubbock. Partners work closely with the Innovation Hub for access to deal flow. The Innovation Hub is a key community partner for LAN, providing meeting space, and supports LAN’s fundraising efforts.

Entrepreneur Socials
The Hub hosts networking socials at fun and unique places in the community. Connections are made with students, mentors, and industry leaders to create a culture of innovation and entrepreneurship in West Texas.

Discoveries to Impact Conference
The Annual Discoveries to Impact (DTI) brings together participants every year to showcase research, engagement, innovation and business startups; compete for prize money for the best innovations and startup ideas; and hear from numerous thought leaders, intriguing panel discussions and dynamic entrepreneur speakers. Teams, students, and faculty work for a year to position their research, projects, and startups for this important annual showcase. In 2021, winners took home a combined total of $399,000 to support scholarly activities and venture creation.
Exploration is the engine that drives innovation. Innovation drives economic growth. So let's all go exploring.

—Edith Widder—