



# TECH TOMORROW

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# STRATEGIC PLAN

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**2021**

Annual Report

# Overview

When Tennessee Tech completed its strategic plan, Tech Tomorrow, in summer 2018, it was a blueprint to provide the university with a clear strategic direction. Dean Thomas Payne and Dean Lisa Zagumny, who led the strategic planning process, put it best in calling it a “living document ... a tool to guide our actions, examine our progress, and measure our success.”

For many organizations, this would have been the stopping place, but that is not the Tech way. Four faculty members were appointed as working group chairs, one for each goal, and committees were formed to begin work on these goals). The Implementation Steering Committee offers feedback on proposals, strives to remove implementation roadblocks, evaluates proposals and schedules prioritization for implementation of proposals. (See Appendix 1 for a list of 2020-2021 ISC members.)

Their actions shape the priorities and actions of the university as we build the Tennessee Tech of tomorrow.

## Meetings

In addition to weekly meetings among the four faculty chairs, a joint meeting of the Implementation Steering Committee and the original Strategic Planning Committee was held on Nov. 11, 2020. This joint meeting was called by President Oldham in order to discuss the plan and future priorities as we hit the midpoint of the Tech Tomorrow timeframe.

In Fall 2020, it was announced that the university’s Budget Advisory Committee was undergoing a restructuring to allow for greater input into the university’s budget. Four subcommittees were added (see Strategic Goal Three for listing of subcommittees). To foster greater alignment with strategic planning efforts, each of the four faculty chairs were placed on one of the subcommittees, and added to the larger BAC. The executive director of strategic planning now serves on all four subcommittees, as well as the BAC.

These budget committees met throughout the fall and spring semesters.

## 2021-2022

The four current working group chairs will continue their work on the budget subcommittees. Four new chairs will be identified to lead future working groups.

**BOLD** denotes new actions since last report

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# Strategic Goal One: Education for Life

Faculty Chair: Ed Lisic, College of Arts and Sciences

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Tennessee Tech provides education that unleashes the potential and passion within our students and prepares them for successful careers and culturally enriched lives. TTU also provides educational opportunities, programs, credentials, and degrees to fuel the lifelong learning necessary for enduring achievement.

## Strategic Actions

*Priority Action A:* Incorporate multiple experiential learning opportunities in all undergraduate programs.

- Rural Reimagined Grand Challenge finishing its third year (**see appendix 2**)
- ePortfolio initiative

*Priority Action B:* Create a Tech-unique general curriculum to provide the foundation for technologically adept, analytically capable, career-ready graduates.

- Career Readiness Certifications

*Priority Action C:* Increase student diversity.

- **Full-time Chief Diversity Officer position established (President's Cabinet)**
- **Admissions counselor for diversity hired**
- **Ethnic Diversity Recruitment Plan**
- **President-appointed task force**

*Priority Action D:* Develop and expand experiences that emphasize diversity and build global awareness, such as international travel, study abroad, and other high impact practices.

- Study Abroad RFP issued to provide greater service options to faculty.

*Priority Action E:* Develop innovative, stackable credentials, and associated pathways responsive to stakeholder needs and entrepreneurial opportunities.

- College of Education and College of Business added and embedded graduate certificates as part of academic graduate programs.

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# *Strategic Goal Two: Innovation in All We Do*

Faculty Chair: Jason Beach, College of Education

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Tennessee Tech innovates in all we do, embracing and deploying our technological foundation in our education, research, service, and stewardship.

## **Strategic Actions**

*Priority Action A:* Every college will develop and implement technologically infused programs.

- College SWOT analyses conducted
- Developed database to aid in identifying and developing market relevant and technologically infused curriculum
- LinkedIn Learning
- **Availability of institutional data in user-friendly interface through IARE**

*Priority Action B:* Increase research, scholarly activities, and intellectual and creative contributions aligned with university, college, and departmental strategic priorities.

*Priority Action C:* Implement specific strategies, structures, and resources to serve adult learners and offer online/hybrid delivery systems to increase accessibility, expand our reach, and enhance our impact and reputation.

- Additional instructional designers added to CITL
- **Vice Provost of Online Education**

*Priority Action D:* Recruit, hire, retain, and reward a diverse faculty/staff with a demonstrated commitment to collaboration, external engagement, and lifelong learning.

- **Full-time Chief Diversity Officer position established (President's Cabinet)**
- **President-appointed task force**

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# *Strategic Goal Three: Exceptional Stewardship*

Faculty Chair: Ann Davis, College of Business

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Tennessee Tech is committed to optimizing resources and continuously improving effectiveness, efficiency, and return on investment for students.

## **Strategic Actions**

*Priority Action A:* Improve efficiency and effectiveness of operational/administrative processes and procedures.

- eTranscripts sent securely and populate Banner without manual entry
- Electronic course substitution form
- **TechExpress**
- **Launchpad University Advising Center**
- **Piloting use of D2L server already in place for digital tenure and promotion submission**

*Priority Action B:* Increase the size and effectiveness of scholarship endowments.

*Priority Action C:* Continue to develop, implement, and evaluate a dynamic long-term budget model that informs effective financial management and consistent strategic investment.

- Establishment of 5-year strategic budget planning committee
- **Restructure of university Budget Advisory Committee to create topic-specific subcommittees (5-year Budget, Facilities & Infrastructure, Effectiveness & Efficiency, Emerging Threats & Opportunities)**
- **Development of training sessions about annual budget process**

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# Strategic Goal Four: Engagement for Impact

Faculty Chair: Bedelia Russell, Whitson-Hester School of Nursing

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Tennessee Tech fosters partnerships with government, business, and non-profit organizations to advance economic and workforce development, create and disseminate knowledge, serve the public good, and generate cultural impact.

## Strategic Actions

*Priority Action A:* Develop new strategically driven sustainable partnerships.

- Prepared inventory of current partnerships (academic, financial, and economic)

*Priority Action B:* Modernize, adapt, and create academic programs, continuing education certificates, and training activities responsive to impactful engagement.

- Academic Programs Gap Analysis
- **Use of D2L server already in place to develop and offer continuing education and professional development courses**

*Priority Action C:* Create and support a network of scholars to evaluate community engagement topics and opportunities.

- **Center for Advancing Faculty Excellence launched**
- **University Fellows Program (in implementation)**

*Priority Action D:* Increase alumni and friend engagement and impact.

- Alumni engagement with the Golden Eagle Alumni Mentoring Network

*Priority Action E:* Support economic development to transform and sustain a thriving hub for innovation, creativity, and employment opportunities.

- Continue to work with both regional and statewide economic development offices

# 2025 Goals

In summer 2019, President Oldham set out goals for the university to reach by 2025. The original announcement can be found at <https://blogs.tntech.edu/president/where-will-we-be-in-2025/>.

Numbers for these goals are tracked each year, with the final numbers to be reported at the start of the 2026 academic year to accommodate goals requiring data calculated after the end of the 2025 academic year.

These goals were all set pre-pandemic.

- 12,000 total headcount enrollment
- 22% minority enrollment
- 82% freshmen-to-sophomore retention rate
- 50% 4-year graduation rate
- 60% 6-year graduation rate
- \$40 million annually in sponsored research
- Growth of online programs
- Strengthen career development
- Be recognized as the champion and center of excellence regarding the future of rural Tennessee communities

Goal	2018-2019 Baseline	2020-2021 Current	+/-
12,000 total headcount enrollment	10,186	10,177	-9
22% Minority Enrollment	16.00%	17.03%	+1.03%
82% freshmen-to-sophomore retention rate	75.00%	77.50%	+2.5%
50% 4-year graduation rate	34.60%	39.60%	+5.00%
60% 6-year graduation rate	55.10%	57.00%	+1.9%
\$40 million annually in sponsored research*	\$20.23M	\$20.05M*	-\$180,000

\* Sponsored research current is 2019-2020; 2020-2021 amount available late summer 2021

# Appendix 1:

## *Implementation Steering Committee*

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Phil Oldham, President  
Lori Mann Bruce, Provost and Vice President of Academic Affairs  
Jeff Boles, Chairperson, Department of Chemistry (Faculty Liaison)  
Brandon Johnson, Vice President of Enrollment Management and Career Placement  
Karen Lykins, Chief Communication Officer  
Tom Payne, Dean, College of Business  
Sandra Smith-Andrews, Associate Professor, Curriculum & Instruction (Faculty Senate)  
Claire Stinson, Vice President of Finance and Planning  
Jennifer Taylor, Vice President of Research and Economic Development  
Lee Wray, Chief of Staff  
Dewayne Wright, Executive Director, Strategic Planning  
Lisa Zagumny, Dean, College of Education

# Appendix 2:

## Grand Challenge

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### *Rural Reimagined Report*

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# Rural Reimagined

Harnessing science, technology and innovation to transform rural living.



# 2019-20 Annual Report

# Michael Aikens

## Rural Reimagined Chair

Since our university's Grand Challenge, Rural Reimagined, was born from the TN Tech Tomorrow Strategic Plan in March of 2019, it has taken on a life of its own across campus and throughout the community. Through the tenacity and dedication of TN Tech students, faculty and staff, Rural Reimagined has reached and impacted 40 individual counties across Tennessee from 2019-2020. As the chair of the Rural Reimagined initiative, I am proud to acknowledge and recognize the multitude of Rural Reimagined successes in the past year by means of this Annual Report, which was assembled and designed by our 2020 Graduate Intern, Sarah Rutledge.



With our grassroots approach, we have facilitated over 3,000 interactions across campus and within surrounding rural areas. Our faculty have created and incorporated rural-related coursework into their classes, and over \$1.5 million in rural grant funding has been awarded with an astonishing \$4.5 million in rural grant proposals submitted. All of this past year's activated grants and proposals are collaborative and interdisciplinary in nature, founded in community engaged research and involvement, and spans across each of TN Tech's nine colleges.

I am especially proud of our students, of whom over 2,000 have been involved with Rural Reimagined through their research, internships, volunteer service, and more. In fact, over 50,000 student service and volunteer hours were completed within our surrounding rural areas since 2019. One student founded the Rural Reimagined Student Club in October of 2019, and now over 50 students are active members. As the director of the Center for Rural Innovation (TCRI), a Rural Reimagined partner, I have the opportunity to observe student entrepreneurs participate in our Innovation Challenges with the specific goals of solving rural-related issues. As 2020 comes to a close, student involvement

continues to expand through student club service projects, Graduate Assistantships, the expansion of internships across the Upper Cumberland, practicum hours completed within rural communities, and students' enthusiasm to innovate ways in which they can serve our rural areas.

Despite the change that COVID-19 has brought upon our university and region, this initiative has not slowed down. Instead, we have recognized the new challenges that our rural areas face and have adapted to provide new ways to foster resiliency, outreach, and assistance to help our communities survive and thrive throughout the pandemic and beyond. This Annual Report represents the astounding work completed by our Rural Reimagined students, faculty, staff, and community. We have a lot in store for the upcoming year, and I am very excited to see the future impacts of this great initiative across rural regions within Tennessee.

Wings Up,

**Michael Aikens**  
 Director, Center for Rural Innovation;  
 Chair, Rural Reimagined Committee

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**Tennessee  
TECH**

# Rural Reimagined Annual Report 2019-20

## Introduction

Rural Reimagined is TN Tech's Grand Challenge initiative to transform rural living through harnessing science, technology, innovation, entrepreneurship, economic development, and university resources. Many distressed, rural communities face problems such as small workforces, food deserts, accessible medical care, the opioid crisis, and access to STEM education. Our university hopes that Rural Reimagined can make an impact to improve rural living through the assets and resources that we have to offer our surrounding communities. The following 2019-2020 Annual Report provides insights, examples, and success stories of the impacts that Rural Reimagined has already made on the Upper Cumberland region through TN Tech faculty, staff, students, and surrounding community members.

## Background **Information**

**The Grand Challenge: Rural Reimagined was established in March of 2019 in alignment with Governor Bill Lee's first executive order to serve rural communities.**

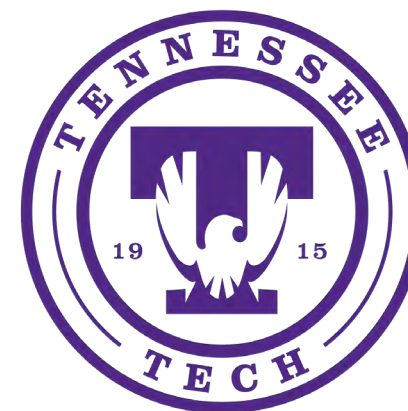
Universities like Tennessee Tech set Grand Challenges to solve important problems by using their resources and encouraging involvement. Nine distressed rural counties in the Upper Cumberland surround TN Tech, so the Grand Challenge of the Rural Reimagined initiative was born out of the need to help these counties. According to Tennessee Tech, our Grand Challenge will develop and support "the success of rural areas throughout Tennessee in a way that can be replicated to help rural areas throughout the country and the world" ("Grand Challenge: Rural Reimagined").

During the implementation of Rural Reimagined, the Grand Challenge committee was formed to lead the initiative. The Grand Challenge committee consists of 15 faculty, staff, and administrators from many different departments, including the Fine Arts, Chemistry, Biology, Exercise Science, Nursing, and Communications departments. The committee immediately began developing a strategic plan for collaboration across departments, integration of rural-based coursework into the classroom, and the development of partnerships with community members, businesses, and entrepreneurs across the Upper Cumberland region. Grand Challenge "partners" range from chambers of commerce to local, rural businesses who become involved with the Grand Challenge to leverage our assets of student interns, public relations, marketing, and grant assistance.

In the summer of 2019, the Director of Rural Reimagined and the TN Tech Center for Rural Innovation, Michael Aikens, hired two Professional & Technical Communication interns to help develop a communication

plan for spreading the word of the initiative across campus and within the community. One intern, Kinsey Potter, founded the Rural Reimagined Student Club in October of 2019, which became a large step in achieving mass student involvement with the initiative. The club now has 44 members, and that was just one of the major achievements that Rural Reimagined accomplished in the 2019-2020 academic year. Kinsey Potter became the first PhD Graduate Assistant of Rural Reimagined in January of 2020. We now employ Graduate interns, undergraduate interns, and paid student workers. Many PhD graduate students utilize Rural Reimagined partners to conduct practicum hours and the Student Learning Center volunteer students have completed over 50,000 service hours through Rural Reimagined.

We continue to make a difference in rural communities through implementing student internships, cultivating co-curricular experiences, integrating applied rural research into academic courses, sending students and faculty to teach about healthcare and other educational outreaches, utilizing the STEM Center and the Water Center, and using Agriculture resources and research to solve problems. Additionally, we leverage our entrepreneurial resources and Center for Rural Innovation to help local businesses recover from the impact and injury of COVID-19. In only a little over one year, we have created many partnerships, developed rural focused research and grant proposals, and inspired our university family to become involved with rural focused activities, outreach, and research.



# Grand **Challenge Committee**



**Kinsey Potter - Rural Reimagined  
PhD Graduate Assistant, Program  
Planning and Evaluation**

"After starting to work with Rural Reimagined shortly after its implementation as an undergraduate intern, it is crazy to think about the multitude of successes that have occurred in only one short year! As the current Graduate Assistant for Rural Reimagined, I am so thankful to continue being a part of an initiative that creates an opportunity for everyone to impact our rural communities. I truly am excited to see the future of our Grand Challenge."



**Dewayne Wright - Executive  
Director, Strategic Planning**

"Rural Reimagined embodies what Tennessee Tech is all about: providing experiential learning to students in a way that helps make the community better. It shows both students and faculty members what a spirit of service that is bold, fearless and confident can do as we partner with rural communities."



**Dennis Fennewald -  
Associate Professor,  
Animal Science, School of  
Agriculture**

"I am excited to be a member of Rural Reimagined as it strives to accelerate collaboration, innovation and entrepreneurship, and to improve the profitability, resource stewardship and quality of life in rural America. Success in rural America provides the basis for long-term success for all Americans."



**Gina Padgett - Communications  
Coordinator, Adjunct Instructor**

"When I first learned about Tennessee Tech's Grand Challenge Committee and its purpose, I was immediately interested. It has been exciting to be on a committee that is actively working with Tennessee Tech students, faculty, staff, and administrators to make positive changes for people living in rural Upper Cumberland communities and beyond. As an adjunct instructor, being on the committee has inspired me to incorporate Rural Reimagined into my curriculum by giving students the opportunity to create solutions for problems many observe or experience in their own communities."



**Jeremy Blair - Assistant  
Professor, Art Education,  
School of Art, Craft & Design**

"The soul of America lives in our rural regions. Innovative projects and fundraising from the Grand Challenge are not the products that should be ultimately measured. The product is the people, the relationships we build, and how we have changed and learned through loving and working with our neighbors and communities."



**Jeff Boles - Professor and Chair,  
Department of Chemistry**

"My role on the Grand Challenge Committee is as a faculty liaison to the University Strategic Planning Committee as well as the faculty at large. Rural America faces many unique challenges compared to urban areas. As a rural University, TTU is uniquely poised to address many of these challenges, especially since some of the most distressed counties in Tennessee are located in the Upper Cumberland Region of our State. Our hope is that some of the solutions we find can be replicated in other parts of Tennessee and other parts of America, if not the world."



**Simone McKelvey - Launchpad  
Student Success Center Director**

"Rural living has a lot to offer but, there are times where living in a rural area can limit its residents' access to resources. Rural Reimagined tries to identify those challenges and create solutions. As a committee member, I have been a support to Gen R programs and made sure that the students served by the advising center that I lead are aware of opportunities related to our challenge. I am a "fixer" so I am excited to be part of an initiative where a group of people are working together to find and fix problems. It's rewarding."



**Jerry Keeton - Coordinator of  
Student Activities and Campus Life**

"Being a part of the Grand Challenge Committee allows me to see how the students at Tennessee Tech work toward goals in rural communities with a strong desire to make these communities better. The committee also allows the Office of Student Activities and Campus Life to work with these students to form new student organizations and hold student events which can benefit rural communities and students from a rural background."



**Melissa Geist -  
Professor, School of  
Nursing, EdD, APRN-  
BC, CNE**

"The resources provided through the RR Grand Challenge website have been instrumental in grant proposal submissions aimed at improving the lives of the people in rural middle TN. The Grand Challenge Committee is made up of an interesting mix of faculty, staff, and students. I love hearing about everyone's initiatives!"



**Karen Lykins - Chief  
Communication  
Officer**

Karen serves as the cabinet level representative and works to further the alignment of Rural Reimagined with the Tech Tomorrow Strategic Plan's implementation. She also helps to proliferate the message of Rural Reimagined across campus and throughout the community.



**Edward Lisic  
- Professor,  
Department of  
Chemistry**

Dr. Ed Lisic has been involved with the Grand Challenge since its implementation and has worked to seek innovative ways to integrate it into his coursework. He also serves as the faculty advisor for Rural Reimagined Graduate Assistants.



**Kester Nucum - Rural  
Reimagined Club President,  
Computer Engineering Major**

"Entering college just last year, I had never expected myself to get involved in something as large as the university's official Grand Challenge. As the Undergraduate Student Representative, it is so exciting and thrilling to see Rural Reimagined grow exponentially. Through my roles on the Grand Challenge Committee and as the President of the Rural Reimagined Club, being able to empower and connect students with opportunities to serve rural areas through their passions or career interests gives me great pride and joy."



**Josh Edmonds - Director,  
Residential Life**

"I wanted to be on the Grand Challenge committee because I felt we could use the power and expertise of on-campus housing staff, the residents that live on campus, and our resources to possibly solve a problem in rural areas or at least make a difference in someone's life. I enjoy being a part of such creative solutions to real world problems and projects and hope to be able to add something to the committee."



**Sarah Rutledge - Rural  
Reimagined Graduate Student  
Intern, Professional and  
Technical Communication**

"Being the Graduate Student Intern and on the Grand Challenge Committee has opened my eyes to rural issues and I have enjoyed helping Rural Reimagined with their initiatives to help solve these issues. Everyone involved is so passionate about it, and that shows in the progress Rural Reimagined has made in just a couple of years."



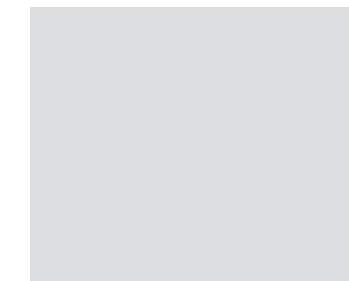
**Michelle Huddleston -  
Assistant Director, Service  
Learning and Community  
Engagement**

"One of the greatest things about Rural Reimagined, I believe, is that it creates opportunities for students' rural counties to go back into their hometown for a service project and make an impact. Rural Reimagined really provides a full circle experience for our students."



**Cheyenne Newby - Service Learning  
Center Representative, Psychology  
Major, Psi Chi Vice President**

"I am honored and overjoyed to be included in both the student club of Rural Reimagined as well as serve as a representative for the Student Learning Center in the Rural Reimagined Grand Challenge Committee. I love to serve different communities and be able to know that my service is making a change in someone's life. I love the outreach and the impact that Rural Reimagined has already had on so many communities. I think this group is a blessing to Tennessee Tech and all of the small counties in Tennessee. I can't wait to see the differences we will make!"

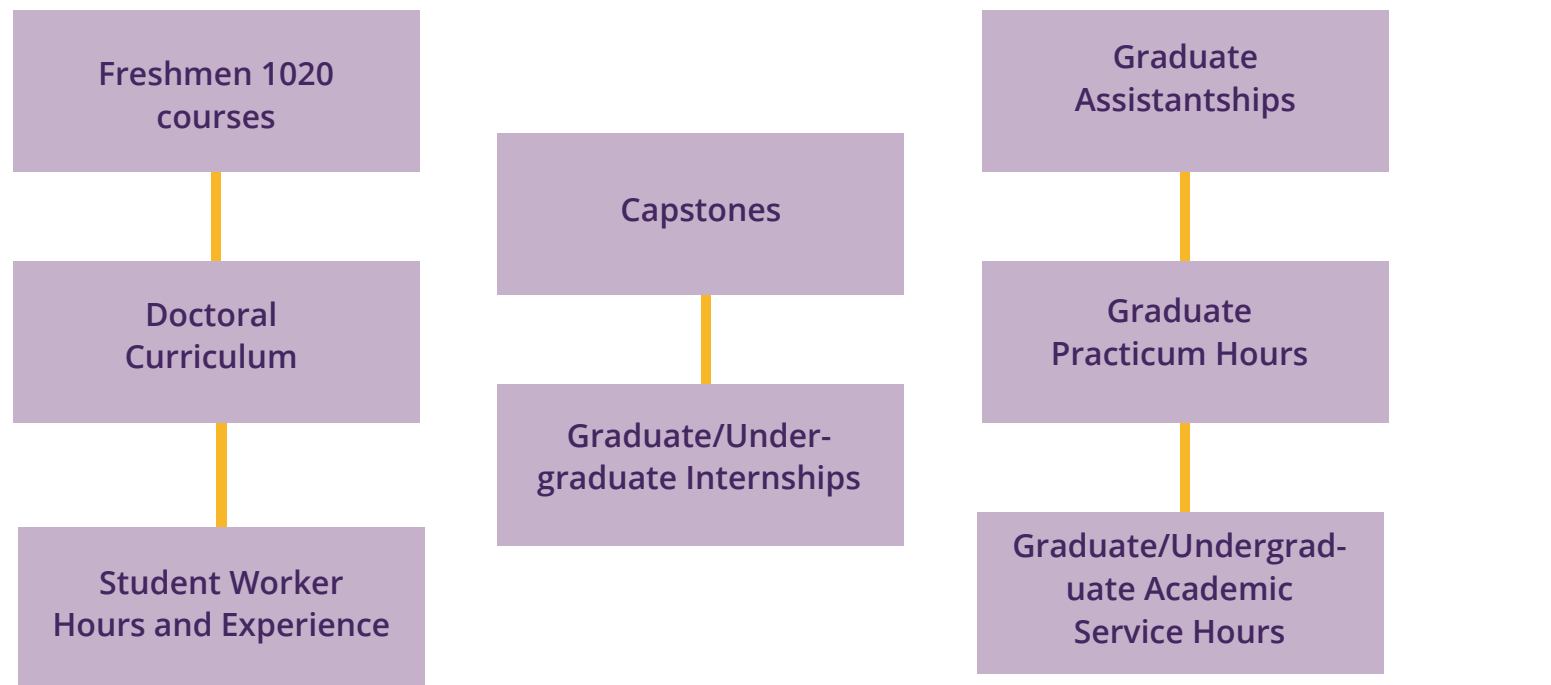


**Hannah Krant -  
Professional and Technical  
Communication Intern**

"Being a Rural Reimagined intern has helped me learn and grow in a real-life environment and given me opportunities to increase my PTC skills by writing stories and helping clients. I am glad to be part of a program that makes such an impact on the community around us."

# Campus Impact

Broad integration of RR into courses and student engagement across nine colleges.



# Research **And Grants**

The below are collaborative, interdisciplinary proposals based on research/involvement across all nine colleges.

Rural-Themed Grants Awarded

Rural-Themed Proposals Submitted

\$1.9 Million +

\$3.2 Million +

# Service **Learning**

Students Involved

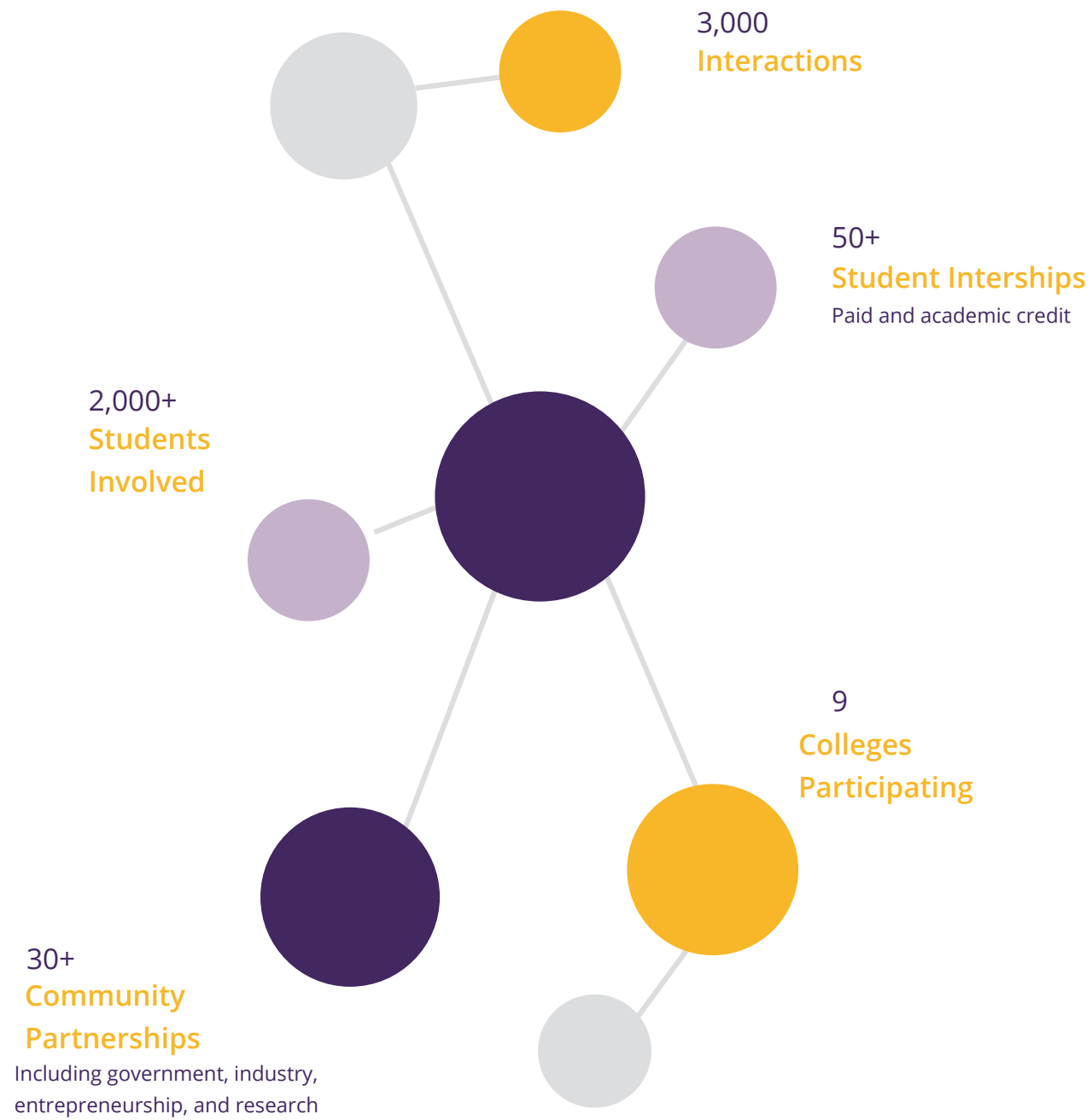
Service and Volunteer Hours

600 +

50,000 +



# Campus and **Community Involvement**



# Student Club

Started in the Fall of 2019

Students Involved

40 +

## Completed Service Projects

### Service Project 01

College of Education PSA for Rural Educator Retention

### Service Project 02

Cookeville Senior Center project

1

Journal of Creative Inquiry Article Published



# Students

## Introduction

When the Grand Challenge: Rural Reimagined was implemented in 2019, one of the initiative's main goals was to integrate it across campus through student involvement. In 2019-2020, over 1,000 students transformed rural living through Rural Reimagined! Students from all nine colleges including the Education, Engineering, Agriculture and Human Ecology, Arts and Sciences, Business, Fine Arts, Graduate Studies, Interdisciplinary Studies, and the Army ROTC continue to engage in the initiative through the Rural Reimagined Student Club, academic and paid internships, paid student worker positions, service learning, research, coursework, graduate assistantships, and practicum hours. This section focuses on the impacts that students have had on and beyond the TN Tech campus through Rural Reimagined. Success stories, quotes from students, and more information is below.

### **Rural Reimagined Student Spotlight: Luis Hevia and Steffano Oyander-Sandoval**

Rural Reimagined would like to congratulate Luis Hevia and Steffano Oyanader-Sandoval on winning the Graduate Coordinator positions with the FUEL grant. As graduate coordinators, they will be recruiting 30 freshmen and sophomores from the College of Engineering, with a focus on students from underrepresented backgrounds such as Hispanic, Latinx, and female. Luis states, "These students will be introduced to socially relevant research projects early in their academic careers. We will be partnering with Rural Reimagined to develop projects for teams to tackle ill-structured problems in our local communities." This program will feature research training, presentation opportunities, outreach opportunities, and a chance to earn a \$600 stipend. FUEL will begin in the Spring 2020 semester.

## Student Club

The following section provides a letter from the club's founder, information on club service projects, and an article that provides RRC's history and overview.



**Do you recognize a need in the rural community that you call home? Do you have an idea for a service project that can transform rural living? Then don't wait. Become a part of the rural projects that are supporting your rural communities.**

## About

Many TN Tech students served their surrounding rural communities in 2019-2020 through getting involved in Rural Reimagined's student club. When students join the Rural Reimagined Club (RRC), they're more than a member – they're an advocate. RRC was founded in October 2019 with a mission to bring students from every discipline together, combine their diverse skillsets, and collaborate on innovative service projects aimed towards serving rural communities. Every student's idea matters, and RRC ensures that all service projects are created and implemented by students. The Rural Reimagined Club's 2019-2020 message to students was:

*Do you recognize a need in the rural community that you call home? Do you have an idea for a service project that can transform rural living? Then don't wait. Become a part of the rural projects that are supporting your rural communities.*



# Letter from **Founder**

## **Kinsey Potter, PhD Student in Program Planning & Evaluation - Club Founder**



It is an honor to say that since it began in early 2019, the Rural Reimagined Club (RRC) has made a large impact on campus and within our surrounding communities. As the founder of RRC, I have had the opportunity to see it exponentially grow through the ideas and dedication of TN Tech students who are passionate about serving their rural communities. As I continue to pursue my PhD at TN Tech, I am truly excited to see this organization's future impacts on rural communities.

When I founded the club in 2019 during an internship with Rural Reimagined, I had no idea that it would flourish remarkably within the first year. I had the idea for the club solely for the purpose of engaging students and gaining their involvement with Rural Reimagined. I believed that the club would not only connect students from diverse circumstances and skill sets, but that it would also be a great resume-builder and source of experiential learning. I was ecstatic, but not surprised, to see the club quickly grow within 2019-2020 to over 50 members all working on not one, but several

service projects. What I had initially founded with the purpose of Rural Reimagined student engagement has turned into a home for students to build friendships, serve, and impact their hometowns and surrounding communities.

As the Grand Challenge: Rural Reimagined initiative continues to grow in numbers and success, I believe that the student club will also continue to flourish and impact surrounding areas. RRC members continue to shine as entrepreneurs, engineers, artists, writers, and rural-serving leaders. The club has served as a space for students from all backgrounds to come together and give back to their community through service projects that they create and implement. I am excited to continue seeing new friendships, partnerships, and projects emerge as students come together within the Rural Reimagined Club.

Wings Up!

**Kinsey Potter**

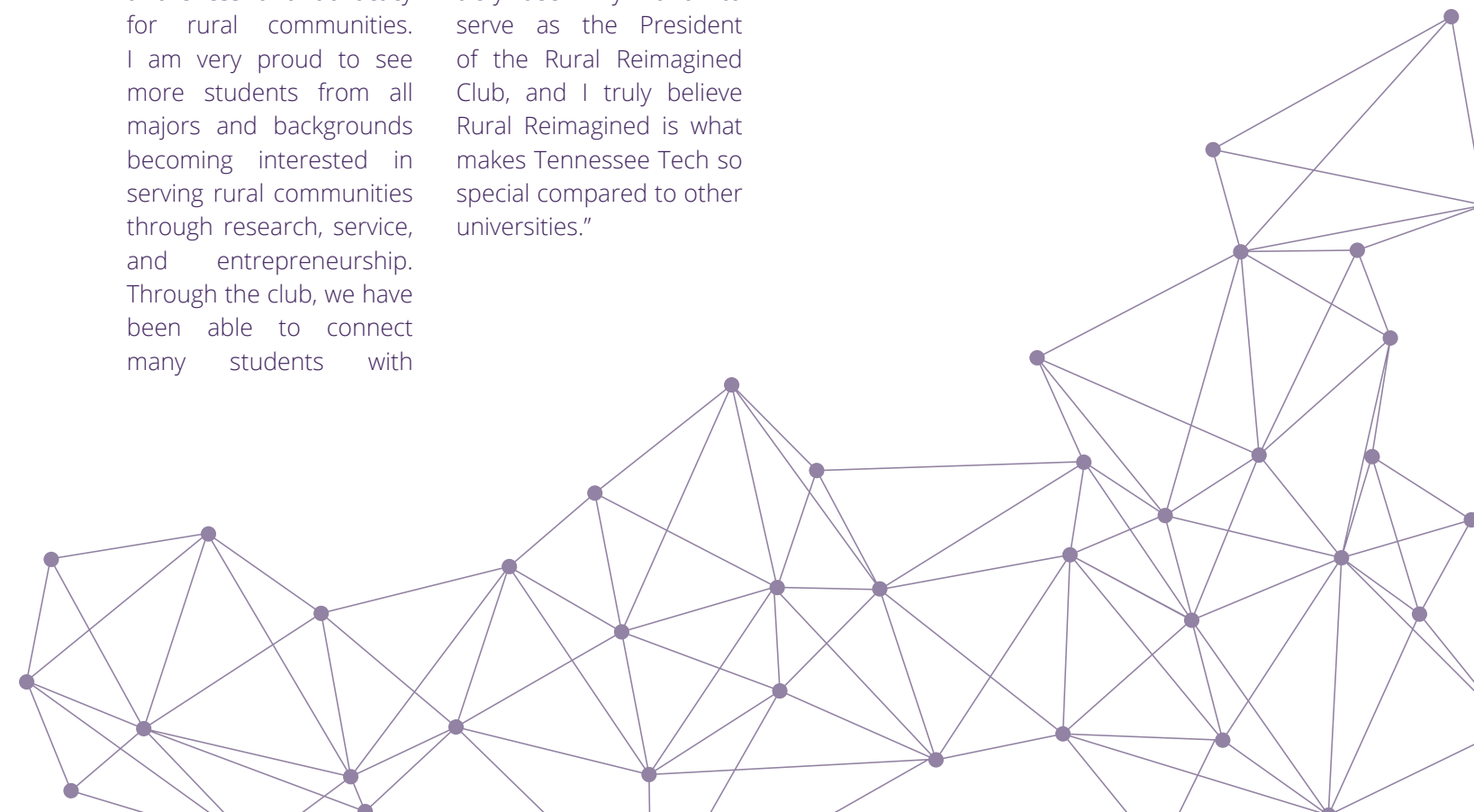
# Current **President**

“As I look back at this past year, Tennessee Tech has provided me opportunities both inside and outside the classroom to grow as a leader, engineer, lifelong learner, and person. When I was elected as the President of the Rural Reimagined Club, I knew that I wanted our upcoming members to discover opportunities to serve the community, especially since many students may not know where to start when it comes to getting involved on campus. The Rural Reimagined Club has grown in its mission of building awareness and advocacy for rural communities. I am very proud to see more students from all majors and backgrounds becoming interested in serving rural communities through research, service, and entrepreneurship. Through the club, we have been able to connect many students with

opportunities that not only address needs in the surrounding rural areas but also allows students to pursue their career and personal interests. We are starting to set a new precedent in partnering with various student organizations to further unite the Tech community under our university-wide Grand Challenge. I am also excited to see our Rural Journeys Speaker Series further the discussion of relevant cross-disciplinary issues while also inviting rural advocates from the local community to share their stories. It has truly been my honor to serve as the President of the Rural Reimagined Club, and I truly believe Rural Reimagined is what makes Tennessee Tech so special compared to other universities.”



**Kester Nucum**



## Rural **Journey Speaker** Series

Rural Reimagined is proud to recognize Art Education students Pedro Laboy, Veston Phillippi, Chuck Kail, and Becca Boggs for teaching ten visual arts class sessions every week in a surrounding rural community.



Under the mentorship of Dr. Jeremy Blair, they are teaching primarily to Kindergarten and first graders at Baxter Primary School in Baxter, TN. Examples of art lessons include learning simple shapes and colors, making flags, and creating textures with homemade slime.



### Dr. Blair states,

"We identified Baxter Primary School as a great partner due to its rural location, early childhood student body, and reasonable commuting range for my participating TN Tech students."



They will continue teaching at BPS until the end of the semester but hope to continue in the Spring.

## Internships

### About

The communities that Rural Reimagined serves have diverse needs, ranging from marketing to agricultural development. One of our main goals is to connect Tennessee Tech students to rural areas with needs that match the student's specific field of study. We hope that students will return to rural communities to work post-graduation. In 2019-2020, we offered and are continuing to offer opportunities for students to gain professional experience while serving surrounding rural needs through academic and paid internships, paid student worker positions, Graduate Assistantships, practicum hours, and more. Through Rural Reimagined, students continue to gain experiential learning while helping their assigned rural community, business, school, or partner. Success stories from both undergraduate and graduate Rural Reimagined students who have taken on these important roles are provided below.



**“Rural Reimagined has given me a great opportunity to learn important skills for my field while helping rural communities. I get to build my resume while working on something that’s meaningful and helps real people.”**

Rural Reimagined congratulates Sarah Rutledge for her new graduate internship! Sarah is pursuing her master’s degree in Professional & Technical Communication in the English department, and Rural Reimagined is excited to have her on board for the Fall 2020 semester. In addition to providing her communicational skill sets to Rural Reimagined, Sarah’s internship will include duties such as editing and writing stories, learning and utilizing InDesign for Grand Challenge documents, and assisting in the development of our website! After graduating with her M.A., Sarah wants to become an editor, and she states,

## Student **Internship Stories**

The following stories were published in Tech Times, Tennessee Tech’s newsletter.



### Former Rural Reimagined Intern accepts Job at Upper Cumberland Development District

Rural Reimagined congratulates alumni Matt Billings who has accepted a job at the Upper Cumberland Development District (UCDD)! Matt graduated in December 2019 with a degree in Professional & Technical Communication (PTC), and he used his PTC skill sets and experience from interning with Rural Reimagined to obtain his position as a Community Development Planner for the UCDD! Matt will continue working with and impacting rural communities through his position in grant writing and community development. In regards to his new job, Matt says, “My experience with Rural Reimagined, and learning the scope and vision of state funding and problem solving for rural issues, coupled with my experience in Technical, Rhetorical, and Business writing within the English PTC program undoubtedly gave me invaluable professional experience, as well as an upper hand for this rewarding career opportunity.” Also, a special thanks to Dr. Kristin Pickering for her continued partnership in linking PTC students with Rural Reimagined opportunities!

### Austin Sanders SeedFork Internship and Pine Street Garden

Rural Reimagined recognizes Austin Sanders, an Agriculture and Horticulture major, for his work with Teens Need Leaders and the Pine Street Garden. Austin interns for the SeedFork of the Highlands, a nonprofit local foods initiative corporation. When at the garden, he shares project ideas, and educates middle and high school students about the importance of their work, when to harvest, how to maintain the harvest, and beneficial practices of gardening. Austin is a student in Dr. Douglas Airhart's Special Topics Class "Community Gardening Training and Development" which aligns with his work and Rural Reimagined's initiatives. On the garden, Austin states, "I think it helps connect the community more, definitely, and it helps kind of ground and connect gardening with life and everything."

### PTC Intern Hannah Krant Accepts Internship with Rural Reimagined

Rural Reimagined (RR) recognizes and congratulates Hannah Krant for accepting an internship with us this semester. Hannah is a senior majoring in Professional & Technical Communication (PTC) within the English department. She will be helping the RR initiative with copyediting and writing stories, blogs, and articles. The internship will connect Hannah with our surrounding rural communities and offer real-life communications experience. Rural Reimagined has had an ongoing partnership with the PTC program, and we are excited to have Hannah onboard! Regarding her new internship, Hannah states, "I am excited for the learning experience and opportunities I will gain through RR and to improve my PTC skills here for my future career path."

# Volunteer Hours

## About

Rural Reimagined offers several opportunities for Tennessee Tech students to participate in service learning addressed towards rural needs. With over 80 community partners ranging from local businesses to libraries, there are a vast number of ways for students seeking service-learning hours to serve the Upper Cumberland region. In 2019-2020, Rural Reimagined student volunteers conducted over 50,000 hours in the Upper Cumberland Region. Service-learning opportunities not only provide our rural communities with needed help and engagement, but also impact our students by creating a passion in them to serve rural areas. Service-learning success stories are below.



**“One awesome aspect of this club is that it’s not just for Agriculture majors, it’s open to everyone. Coming from working on the fair board, I understand the process of hard work, and it makes life a lot easier if you have a team comprised of many different talents, instead of them all coming from the same pool.”**

**-Dawson Davidson, Agribusiness Management Student**

## Art Education Majors Volunteer

Rural Reimagined is proud to recognize Art Education students Pedro Laboy, Veston Phillippi, Chuck Kail, and Becca Boggs for teaching ten visual arts class sessions every week in a surrounding rural community.



Under the mentorship of Dr. Jeremy Blair, they are teaching primarily to Kindergarten and first graders at Baxter Primary School in Baxter, TN. Examples of art lessons include learning simple shapes and colors, making flags, and creating textures with homemade slime.

### Dr. Blair states,

“We identified Baxter Primary School as a great partner due to its rural location, early childhood student body, and reasonable commuting range for my participating TN Tech students.”



They will continue teaching at BPS until the end of the semester but hope to continue in the Spring.



# Student Research

## About

Students incorporated rural-related research into their studies across campus during the 2019-2020 school year through civic engagement, course projects, and student club service. Student researchers ranged in colleges, disciplines, and interests. One student who focused on rural-related research was Kester Nucum, a Computer Engineering student and the 2020 Rural Reimagined Student Club President. Regarding his research, Kester states, "Being part of Rural Reimagined has helped me realize that I can use my career and my platform to serve people in need through research, civic engagement, and connecting people and ideas together. Over the past year, I have developed the passion to serve rural and distressed communities and to educate the next generation of engineers through STEAM. Growing up in a rural area, I did not have as many opportunities as those in more urban communities, and I hope that in the future, through engineering or education, I can provide better opportunities for those who may not have that many." See below for more student researcher success stories.



## Chemical Engineering Grad Student Wins 2nd Place in American Fisheries Society

Rural Reimagined congratulates Dennis Piercy, a Master's Chemical Engineering student, in winning second place for his student presentation at the 2021 Tennessee Chapter of the American Fisheries Society meeting. He presented about the joint research effort between the Water Center and the Chemical Engineering department for producing a nitrogen stripping/oxygenating column for fish hatcheries that would help our rural ecosystems. Dr. Jeff Schaeffer and Dr. Holly Stretz mentored Dennis throughout the project. Regarding his project and presentation, Dennis stated, "This opportunity really has been so unique due to the interdisciplinary cooperation between chemical engineering and the Water Center. I took a chemical engineering design and presented it to fish specialists effectively, and I was so happy that people were interested in the research. This has been an amazing experience that has expanded my knowledge and skill sets as I transition from academia to industry."

## Rural Reimagined Student Spotlight: Ky Hensley & Rugby

Rural Reimagined features English Major Ky Hensley for her Historic Rugby Service Learning Project under the mentorship of Dr. Josie McQuail. After researching Rugby, Ky identified an interesting collection of postcards sent from Sarah Kellogg Kimber Walton during her travels to England in 1908-1909. After discovering many postcards were neither transcribed nor inventoried, Ky proposed designing an inventory to allow readability and accessible location of the postcards. Ky states, "I feel like this project would be a wonderful project for students to continue working on, as I am laying the foundation of what I hope the postcard database will someday become." Ky recently joined the Rural Reimagined student club, which views the project as a great service opportunity for the future.

## Faculty

### Introduction

Faculty researchers provided many key components in impacting rural communities through 2019-2020. In addition to the faculty who served and are serving on the Grand Challenge Committee, many incorporated rural into their coursework, research, and grant proposals. Faculty continue to research and write grant proposals surrounding rural areas and their needs. In addition, faculty were very supportive of Rural Reimagined student engagement through assisting club service projects, creating rural-related courses, and providing coursework opportunities for students to become submerged into surrounding rural communities. The following section provides further detail on faculty engagement and contributions to Rural Reimagined throughout 2019-2020.

## Grants

### About

Over the 2019-2020 year, many faculty were awarded rural-based grants and several continue to submit grant proposals that focus on transforming rural living. Rural Reimagined's faculty webpage not only provides grant success stories, but it also provides funding and secondary data resources to encourage more faculty to write grants. The following numbers and success stories represent the activated faculty grants in 2019-2020.

### Faculty Grant Spotlight: Drs. Difurio and Nabors Awarded \$63,285 Rural-Based Grant

Rural Reimagined recognizes PI Dr. Ferdinand DiFurio (Economics Finance and Marketing) and CO-PI Ms. Yolunda Nabors (Economics Finance and Marketing) for being awarded a \$63,285 rural-based grant from the Tennessee Rural Communications Cooperatives Association to conduct an economic impact analysis of a broadband project in Tennessee. According to Dr. DiFurio and Ms. Nabors, "Broadband access that meets established standards is considered by many a necessary condition for technological advance and economic growth in modern day times. And while it is clear that broadband expansion creates jobs and increases business and commerce, it represents technological progress that is vital to a growing economy." Rural Reimagined is excited to see the impact of this study on our surrounding rural areas.

## Grant Stories

The following stories were published in Tech Times, Tennessee Tech's newsletter.

### Faculty Grant Spotlight: Mechanical Engineering Department and EOA Grant

Rural Reimagined recognizes PI Dr. Pinggen Chen and CO-PIs Drs. Vahid Motevalli, Stephen Canfield, Olorunfemi Ojo, and Indranil Bhattacharya for being awarded a \$779,823 rural-based grant from the U.S. Dept. Of Energy for developing an EV demonstration testbed in the Upper Cumberland region. Although electric vehicles (EVs) are promising solutions for rural mobility due to the lower fuel cost and lower maintenance cost, rural and economically distressed areas are facing numerous challenges in adopting EVs due to low population density, lack of EV charging infrastructures, lack of experience, and low consumer awareness. The project's EV demonstration testbed will provide the experience, research, demonstration and educational opportunities needed to address EV adoption issues in addition to reducing transportation cost, fossil fuel consumption and greenhouse gas emissions, and improving the fuel diversity, environmental quality and public health in rural areas.

### Faculty Grant Spotlight: Renaissance Foundry Research Group & VentureWell Awarded Grant

Congratulations to the Renaissance Foundry Research Group (RFRG) for receiving a VentureWell faculty grant, "BioFoundry Design: Leveraging Biomimicry to Advance Environmental and Social Sustainability Innovation in Prototypes Developed in Foundry-Guided Undergraduate Chemical Engineering Courses" (Dr. P. Arce, PI with Co-PIs: Drs. A. Arce-Trigatti, S. Jorgensen, and J.R. Sanders), which will positively impact rural areas. Through the Renaissance Foundry Model (RFM), focused on the development of the "holistic-style" engineering professional, students will adopt and adapt elements of Biomimicry to develop prototypes of innovative technology that are friendlier to the environment. Dr. Arce states, "this is a wonderful recognition for the collaborative RFRG efforts in implementing, assessing, and scaling the RFM as an effective platform to develop holistic-style engineers." View here: <https://www.tntech.edu/grand-challenge/news/articles/20200826-venturewell-grantspotlight.php>

### Faculty Spotlight: Dr. Geist Received Tolbert Research Award

Dr. Melissa J. Geist received the Tolbert Research Award to serve as PI for ESTAR Sano (Education, Support, Training, Awareness, and Resources) to mitigate the negative effects of COVID-19 on the Hispanic/Latinx population in the Upper Cumberland Region. The ESTAR team includes co-PI, Dr. Mark Groundland (Associate Professor of Foreign Languages-Spanish), Cary Cass, MSN, RN, CHSE, TESL (WHSON Lab Coordinator and former Peace Corps Volunteer in El Salvador), Adriana Montalvo (S1 Nursing Student), and Cesar Espinosa (J2 Nursing Student). They conducted educational workshops for over 100 people, provided hand sanitizer, masks, Lysol spray, antibacterial wipes, etc., and distributed 200-Spanish language laminated cards with information about COVID-19 at the recent RAM clinic. They hope to reach more people this year and to continue partnerships to provide education and resources for chronic diseases. The ESTAR team is grateful for the financial support provided by Rebecca Tolbert.

### Faculty Success Story: Dr. Chavez, PI & Dr. Weaver, Co- PI Awarded Rural-Based Grant

Rural Reimagined recognizes PI, Dr. Laura Arias Chavez and Co-PI, Dr. Sam Weaver for being awarded a \$320,791 NSF-funded grant for their project "Reclaiming Valuable Resources from Industrial Wastewater." Although materials and energy in industrial wastewater act as potential resources, their reclamation has been overlooked. This project supports collaboration efforts to investigate producing energy from locally grown biomass to reclaim materials from streams that would have been waste. This will result in effective and economical separation of industrial wastewaters across Tennessee.

## FUEL Success Story

Rural Reimagined (RR) congratulates Drs. J. Robby Sanders, Andrea Arce-Trigatti, and Pedro E. Arce for winning the 2021 Thomas C. Evans Engineering Education Paper Award from the American Society of Engineering Education, Southeastern (ASEE-SE) Section. The co-authors delivered a lecture at the annual ASEE-SE virtual meeting, and the winning manuscript, "Promoting student problem-identification skills via a Jeopardy-inspired game within the Renaissance Foundry," was published in Education for Chemical Engineers. It explores the role of a Jeopardy®-inspired game as an Organizational Tool within the Renaissance Foundry and its effectiveness for problem identification. These colleagues have also partnered with RR to lead the SERS-funded Holistic Foundry Undergraduate Engaged Learners (FUEL) program, which focuses on enhancing research opportunities for underrepresented student communities in engineering.



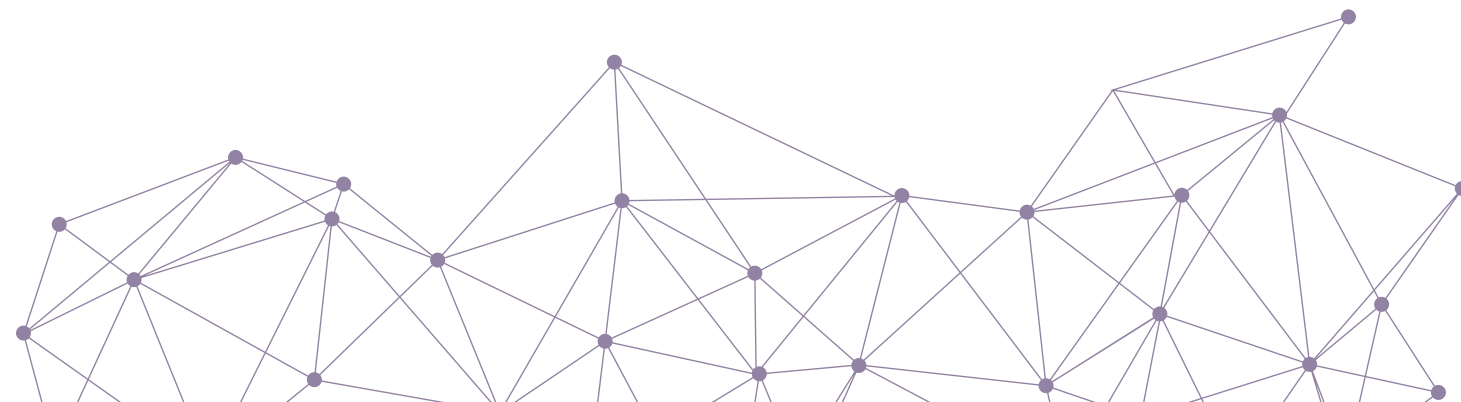
# Holistic Foundry Undergraduate Engaged Learners (FUEL) Program

Rural Reimagined congratulates PIs and Co-Directors Dr. Andrea Arce-Trigatti (Curriculum and Instruction), Dr. Stephanie N. Jorgensen (Chemical Engineering), Mr. Michael Aikens (Rural Reimagined/TCRI), Dr. J. Robby Sanders (Chemical Engineering), and Dr. Pedro E. Arce (Chemical Engineering) for receiving the Holistic Foundry Undergraduate Engaged Learners (FUEL) program grant from the Tennessee Board of Regents (TBR). The FUEL program uses the Renaissance Foundry Model, an innovation-driven pedagogical engine, coupled with the Rural Reimagined Grand Challenge initiative at TN Tech, to provide students with an opportunity to transform learning towards the development of skills associated with holistic engineers.

The program's purpose is to provide inclusive and comprehensive training to diverse populations in engineering that will help them develop learning strategies aligned with those of holistic engineers useful for their academic career through the development of a student-team research project. Regarding the core platform which uses the Renaissance Foundry Model, Dr. Arce states, "We are excited to be leveraging the Foundry as a central guiding tool towards meeting this program's objectives to develop students as holistic learners." Dr. Jorgensen supports this by indicating, "This pedagogical engine has been a useful tool in the classroom setting as revealed by increases in students' critical thinking skills. We are very excited to see a larger application of this effective tool to enhance student learning in this extracurricular context."

Holistic engineers are trained within an approach that emphasizes contextualized problem formulation and encourages innovative solutions to complex social challenges. Dr. Sanders says the following about holistic engineers, "Given the complexity of the challenges facing society today, the development of professionals with strong content knowledge and the ability to work within and across disciplines represents an important goal for facilitators of learning to help students develop these skills for their careers."

Program objectives align with Rural Reimagined, with the expectation that the research projects will have ties to participants' hometowns via outreach activities in partnership with Mr. Carlos Galindo and the Science Olympiad Collegiate Scholars program. Regarding the FUEL program, and associated collaborations, Dr. Arce-Trigatti states, "This is a passionate, interdisciplinary team that cares deeply about students' holistic development and growth. We are thrilled to have the opportunity to share the Foundry Model in various contexts to help foster student learning and fuel growth through the training offered in this program." Mr. Aikens shares, "The FUEL grant is in the true spirit of what Rural Reimagined is all about. I am very excited to see how this is one more example of ways in which TN Tech will serve rural areas and underserved populations, and I can't wait to see its impacts."



# Rural Reimagined Coursework and Resources

## About

Even before the implementation of Rural Reimagined in 2019, TN Tech faculty have incorporated rural-related research into their coursework and student expectations. In 2019-2020, Rural Reimagined identified and recognized faculty for their rural-related courses and course projects. Faculty came from various departments across campus including Pre-Professional Health Services, Computer Science, Chemistry, Professional & Technical Communication, and more. The following section provides examples and success stories from faculty who incorporated Rural Reimagined into their courses during the 2019-2020 year.

# Faculty Coursework Stories

The following stories were published in Tech Times, Tennessee Tech's newsletter.

## Integrating the Grand Challenge into University Classes: Current Successes

Since the implementation of the Grand Challenge in March 2019, over 400 students and 50 faculty, staff, and administrators have jumped on board through incorporating the passion of serving rural into service projects, classwork, and capstone courses. Three faculty have already succeeded in creating rural-related connections in their courses. Dr. Jeffrey Boles incorporated rural into four university connections classes through healthcare related challenges last semester. Dr. Gina Padgett urged her students to create persuasive presentations over a rural problem, while Dr. Bill Eberle's capstone Computer Science students created mockups of software products that would address rural problem and presented them!

## Rural Reimagined Spotlight: Dr. Kristin Pickering & the PTC Program

March 2019 marks one year of partnership between Rural Reimagined (RR) and the Professional & Technical Communication (PTC) program in the English department. Regarding her program's involvement, Dr. Kristin Pickering states, "Rural Reimagined is an excellent experience for students, especially through our required PTC internships. It gives students opportunities to work with the University and the community and see how their degree skills, such as grant writing, technical writing, and communication, can be utilized." One PTC graduate and past RR intern, Matt Billings, states, "My opportunities from Rural Reimagined, coupled with my learned skills in the English PTC Program, undoubtedly gave me professional experience for my current career." Similarly, PTC graduate Kinsey Potter states, "Working with Rural Reimagined has allowed me to utilize my PTC skills in real life. I now see that communication has a strong capability to make a change." Matt now has a job at the Upper Cumberland Development District, and Kinsey is working on her M.A. while continuing as the RR graduate assistant. Dr. Pickering encourages students and faculty to become involved, as she states, "We have seen so much success so far in this partnership. No matter what interests students have, they can find a place in Rural Reimagined."

## Rural Reimagined Grand Challenge Success Story with UNPP

The Rural Reimagined Grand Challenge is excited to share the success story of Mrs. Ann Marie Carrick and Mr. Thomas Turner for their implementation of rural reimagined into their Spring UNPP 2020 courses. Mrs. Carrick and Mr. Turner developed the course, titled "Rural Healthcare Exploration," to allow students in the Pre-Professional Health Sciences programs to work with local doctors and volunteer in healthcare settings to explore the importance, challenges, and changes in healthcare within rural areas. UNPP 2020 students shadow professionals, volunteer in rural areas, and ask questions revolving around rural medicine, such as questions regarding doctors' opinions on what efforts could alleviate the problem of limited access to a variety of practitioners in their areas. The courses are an opportunity for students to learn, reflect, and discuss their findings in a panel, while it simultaneously sparks inspiration in the students to work in rural areas after earning their medical degrees. Mr. Turner states that he hopes through seeing problems in rural medicine up close, students will maintain the mindset of, "Wow, that is something we could help with someday!"

## Rural Reimagined Partners with UCWP

The Grand Challenge announces its new partnership with the Upper Cumberland Writing Project! Drs. Tony and Jane Baker direct the writing project at Tennessee Tech to support and improve writing instruction across all grade levels in the Upper Cumberland through professional development workshops and different events to provide opportunities for educators to share, learn, and write with each other. The UCWP, one of more than 200 sites of the National Writing Project, is directly aligned with Rural Reimagined, and the Grand Challenge is so excited about collaborating with such an influential program.

## Dr. Norris Incorporates Rural into Coursework

Rural Reimagined recognizes Dr. Lachelle Norris, Professor of Sociology, for integrating rural components into her coursework. Her Sociology of Appalachia class discusses grassroots economic development by highlighting Upper Cumberland businesses that value environmental and economic sustainability. The students also preserve and share rural traditions and practices on a class website devoted to this video project: <https://www.sustainableappalachian.com/>. In her Rural Sociology class, students work with local community members on a variety of projects in our rural areas. Both are upper-level electives available to all students. Dr. Norris states, "My goal is that my students will uncover the roots of the problems in our rural areas, and come up with solutions that will not only provide temporary relief but that can make a difference for the long haul."

### Rural Reimagined Faculty Success Story with Dr. Jeffrey Boles

Within a year of the Grand Challenge initiative, many faculty have incorporated Rural Reimagined into their coursework and research. In the fall semester, Dr. Boles successfully integrated the Grand Challenge into four university connection classes through rural healthcare related challenges. Sixty students, instructed by Dr. Boles, Dr. Coonce, Dr. Carrick, and Dr. Turner, researched solutions and disseminated results to rural problems through flyers, posters, and educational presentations. Dr. Boles loves the Grand Challenge, and he believes that "integrating Rural Reimagined into our pre-health science first year experience courses introduces it to new students."

### Rural Reimagined Faculty Success Story with Dr. Bill Eberle, Mr. Eric Brown, and Mrs. Ania Jennings

Over the fall semester of 2019, Dr. Eberle, Mr. Brown, and Mrs. Jennings incorporated the Grand Challenge into three sections of a capstone course for Computer Science majors through approaching real world problems with computer science. Students found a Grand Challenge problem, created mockups of software products that would address the problem, and presented them. Dr. Eberle stated that he really "liked the fact that we were doing something for the community," and he appreciates the Grand Challenge because it gave the students the opportunity to use their skills to solve real world problems in an exciting way.

### Rural Reimagined Faculty Success Story with Gina Padgett

Last fall, Professional and Technical Communication Instructor Gina Padgett incorporated the Grand Challenge into her Communicating in the Professions course with flying colors. After learning about the Grand Challenge, Padgett's students researched a real-world problem affecting people living in rural communities, critically evaluated the problem and used problem-solving skills to present a solution to the class. In addition to providing students with skills in persuasive communication, Padgett believes incorporating the Grand Challenge also "gives them the opportunity to create a solution for problems that affect people, their families, and their communities ... life changing skills."

## Water Center

### About

The Center for the Management, Utilization, and Protection of Water Resources (Water Center) has been a new partner to Rural Reimagined through collaboration on research, student outreach, and university engagement. The Water Center's focus on enhancing water quality, water security, and aquatic biodiversity in Tennessee coordinates with Rural Reimagined's mission to transform rural living. Through the Center's research, TN Tech students and faculty have served to enhance the ecosystems of rural areas in the Upper Cumberland region. Featured Water Center and Rural Reimagined success stories are provided below, and we anticipate new collaborations during the coming year. For more information on the Water Center, visit <https://www.tntech.edu/research/centersandfacilities/wrc/index.php>.



**Tennessee**  
**TECH**

# Letter of **Collaboration**

## Jeff Shaeffer, Director of the Water Center

As the director of the Center for the Management, Utilization, and Protection of Water Resources (Water Center), I see Rural Reimagined as one of our most valuable partners. Our center is an independent research group at Tennessee Tech, and our mission focuses on biodiversity, water sustainability, simulation and modeling, and the food-water-energy connection. We receive State funding to work on partner-inspired questions associated with the conservation of Tennessee's vast and varied water resources. Our mission directly aligns with the Rural Reimagined initiative to transform rural living in our surrounding rural ecosystems.

Although the Water Center's partnership with Rural Reimagined established less than a year ago, many collaborations have already occurred. Rural Reimagined provides us with stakeholder connections, helps us to think globally while acting locally, and assists us in identifying the important challenges that our surrounding communities face. Over the past year, two key project ideas resulted from our partnership: the economic benefits of conservation and the possibility of more profitable products specific to surrounding small farms.

Considering that Rural Reimagined aims to transform rural living through factors such as economic development, one of our ideas emphasizes the possibility for economic benefits through conservation. For example, rural communities are rich in natural resources that translate directly into economic benefits via high quality water, fishing, hunting, paddling, hiking, and even caving. Because the above resources are sustained by good land use practices, we can assist landowners with knowledge and technology transfer and help them identify the best practices. One example is our new research on the benefits of paper mulch over plastic mulch for growing produce,

which aligns directly with Rural Reimagined's mission. If paper mulch performs well, growers could save money and reduce environmental impacts on streams from plastic contamination, thus resulting in rural economic benefits and better stream health.

Another project example that Rural Reimagined will continue to provide support for and collaboration on, is the ongoing search for new products that can be profitable on small farms. Rural farms in Tennessee are transitioning away from traditional crops, like Tobacco, but into an uncertain future. The Water Center is investigating bait minnow culture as a low-cost way to take advantage of the thousands of small ponds available throughout the region. While minnows cost very little to produce, there is an unlimited demand with a farm's profit resulting in about 10 dollars per pound.

These examples represent how the mission of the Water Center directly aligns with Rural Reimagined and illustrates the benefits to both entities from our ongoing partnership and collaboration. While the Water Center is continuing our long-term research focused on the continued development of aquaculture ecosystems in rural communities, I know that Rural Reimagined will continue to provide support and resources, such as marketing and outreach. Our collaboration is nascent but powerful, despite constraints imposed by the COVID-19 pandemic, and we expect great things in the coming year.

Thank you,



**Jeff Shaeffer**



### Rural Reimagined Partners with the Water Center, Which is Doing Great Things!

The Grand Challenge is excited to announce its new partnership with TN Tech's Water Center, which has many great events and projects planned for the semester! Currently, Dr. Jeff Schaeffer, the new director, and Dr. Brad Cook are working on new research to determine if bait minnow aquaculture could be a cash crop for rural landowners. The research will take place at Oakley Farm, and will be performed primarily by Tech students under Dr. Cook's supervision. Since there is unlimited demand for bait minnows and there are currently many farms in Tennessee that have ponds, the project would be a great opportunity to provide economic development while also engaging students with hands-on experience throughout the process. Dr. Schaeffer states, "As a new director, I believed that the water center needed to be more integrated with the university community," and Rural Reimagined is very excited to see the impact that the Water Center will take on both rural communities and university engagement alike.

### The Water Center and Chemical Engineering Students Work to Solve a Rural Problem

The Water Center is currently collaborating with a local business to solve a serious problem in rural environments – the over-saturation of Nitrogen in fish hatcheries! Trout fishing is a popular sport in Tennessee, and due to its need for trout stocking, thousands of Rainbow Trout are produced in State Fish Hatcheries every year. However, hatchery managers have recently observed that some hatchery water sources are becoming super-saturated with Nitrogen, which is unhealthy and stressful for the fish and needs to be reduced. Currently, Dr. Holly Stretz is leading a Capstone Chemical Engineering course in which three student teams are looking at ways to improve the Nitrogen removal process using inexpensive column diffusers. The Water Center is providing the equipment to the teams, who will investigate strategies to make the diffusers work more efficiently and effectively. In addition to the support of the Water Center, the Red Silo Brewery is providing work space and production units to help set up the experiment, which will include replicating hatchery conditions through creating saturated environments inside kegs filled with spring water!



# The **Water Center** and **Rural Conservation** with **Paper Mulch**

The Water Center, a Rural Reimagined partner, is working with the Defenders of Wildlife to reduce plastic waste in streams, specifically in the Walden Ridge on the Cumberland plateau – the only TN stream containing the Laurel Dace, one of the rarest fishes in the world. It remains in only two of the seven streams within its original small range, and water quality within its remaining habitat is affected by agriculture.

The area's tomato growers use plastic mulch to prevent weeds, but plastic often ends up in streams after windstorms or during post-season removal. Due to the negative effects of plastic mulch on stream environments, the Water Center is partnering with Rural Reimagined and Defenders of Wildlife to examine a new product that might solve the problem of plastic waste in streams. Regarding the new product, Water Center Director Dr. Jeff Schaeffer states, "Paper mulch is a novel product with potential advantages to both growers and the environment as it controls weeds but also eventually turns into compost. Paper mulch will not enter streams, and growers will not have to pay to remove or dispose it."

The Water Center will begin testing paper mulch next spring at Tech's Shipley and Oakley Farms, and Dr. Schaeffer adds, "If it works well in our region, we can then share results with growers to see if they might be willing to give it a try. We plan to set up the research as a series of undergraduate research projects for students interested in agriculture, soils science, and conservation."

## STEM Center

### About

TN Tech's Millard Oakley STEM Center (STEM Center) partnered with Rural Reimagined shortly after its implementation in 2019. The STEM Center has provided resources to help Rural Reimagined connect with surrounding rural communities through outreach events, rural-based grants, and various STEM programs. Despite COVID-19's impact on the country, the STEM Center continued offering educational resources through their STEM AT HOME program, which targeted students and their parents/guardians to ensure they could continue to engage in educational STEM lessons and activities. In addition, STEM Center programs, like the STEM Ambassador Program, provide TN Tech students with opportunities in local communities through assisting students and teachers, networking, conducting community service, and facilitating outreach events. We are proud to partner with this rural-serving Center. Success stories are provided below. For more information about the STEM Center, visit <https://www.tntech.edu/education/stem/index.php>.

### STEM Center Receives \$50,000 Grant

Congratulations to PI Mr. Carlos Galindo (STEM Center) and Co-PIs Dr Andrea Arce-Trigatti (College of Education) and Dr. Stephanie Jorgensen (Chemical Engineering) for being awarded the Science Olympiad Collegiate Scholars (SOCS) program grant of \$50,000. The SERS-funded SOCS program will go through the Oakley STEM Center and will target underrepresented and minority student populations in the STEM fields. The program will recruit 20 undergraduate and 10 graduate students who represent these characteristics and who will gain skills that positively impact both their academic success and the communities they serve while working towards the goal of coordinating next year's Regional Science Olympiad. Mr. Galindo states, "I am personally really excited to be able to work with students to develop their professional skills while at the same time working on a project that can positively impact k-12 students in the Upper Cumberland."

# Letter of **Collaboration**



## **Millard Oakley STEM Center**

**TENNESSEE TECH**

### *Letter of Collaboration from the Oakley STEM Center*

The Oakley STEM Center at Tennessee Tech is one of seven designated Regional STEM Innovation Hubs in Tennessee. The intent of Regional STEM Innovation Hubs is to serve as a nucleus of STEM activity and encourage collaboration among school districts, post-secondary institutions, STEM businesses, and community organizations that are committed to amplifying and accelerating the impact of STEM programs in the region. Because the Oakley STEM Center serves one of the most rural regions of Tennessee, I believe that our partnership with Rural Reimagined is extremely valuable.

Over the past year, we have been fortunate to partner with Rural Reimagined on multiple projects. One such example is our recently formed STEM Ambassador program, which includes 20 Tennessee Tech freshman students, primarily from rural areas, who are pursuing STEM-related degrees. Our STEM Ambassadors spend approximately five hours per week assisting P-12 teachers with STEM-related activities. Goals of the STEM Ambassador program include providing the ambassadors with a sense of belonging and community with fellow cohort members, connecting them to their hometowns and subsequently letting them see firsthand how they can have a positive impact in their home communities, and connecting them with industry partners to provide them with a well-rounded understanding of local opportunities after graduation. Rural Reimagined has played an invaluable role in this program by helping us to secure industry partnerships for each of our ambassadors.

Rural Reimagined has also partnered with us to help encourage students to participate in other STEM Center programs and events, such as our Regional Science & Engineering Fair, the Regional Science Olympiad, and our STEM AT HOME initiative. The mission of the Oakley STEM Center directly aligns with that of Rural Reimagined, and I am excited to see our partnership continue to grow.

Sincerely,

Darek W. Potter, Ph.D., P.E.  
Director  
Millard Oakley STEM Center  
Tennessee Tech University

Tennessee Tech / Box 5112 / 155 W. 7th Street / Cookeville, TN 38505 / 931-372-6573 / F: 931-372-3517 / [tntech.edu/stem](http://tntech.edu/stem)

# Rural **Reimagined Spotlight:** The **Oakley STEM** Center

Rural Reimagined is proud to recognize the Oakley STEM Center, a partner whose mission and educational outreach in the community directly aligns with TN Tech's Grand Challenge. Since the implementation of COVID-19 remote learning, the STEM Center has delivered weekly digital/printable STEM activities featuring a wide range of topics to ensure that students in our Upper Cumberland region continue learning, engaging, and experiencing STEM education. The STEM Center has always succeeded in providing our rural communities with access to STEM education through their lending library, student fieldtrips, the annual Science & Engineering Fair, the STEMobile, educator professional development workshops, and engaging community outreach events; and, they continue to ensure that our regional community has an abundance of interactive programs and activities even during challenging times when face-to-face interactions are not possible. The STEM Center Director, Darek Potter states, "As a STEM infused university, it is essential that we continue to provide access to high quality learning experiences for students in our regional communities. We are excited about the current resources and programs that are being developed by our team each week to support students, teachers, and parents as they navigate the current challenges associated with distance learning. It is critical that we continue to be innovative and purposeful while meeting the needs of our surrounding rural communities." Rural Reimagined's mission is to harness science, technology, and innovation to transform rural living, and we couldn't work towards that goal without partners like the Oakley STEM Center.

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C E N T E R  
TENNESSEE TECH

# STEM Center Awarded \$49,875 Grant for ARISE Program

Congratulations to Rural Reimagined's partner the Oakley STEM Center and PI Dr. Darek Potter (Director of STEM Center), Co-PI Dr. Julie Baker (Associate Dean of the College of Education), and Co-PI Mr. Harry Ingle (Director of the College of Engineering Student Success Center) for being awarded a \$49,875 grant to develop the Ambassadors for Rural Innovation & STEM Education (ARISE) program. The ARISE program will recruit 20 first-year students (student ambassadors) from economically disadvantaged rural communities who are pursuing STEM and STEM-related majors.

Over the course of the program year, the student ambassadors will develop skills in teamwork, communication, networking, teaching pedagogy, and community service. They will also gain experiential learning by spending time in P-12 classrooms assisting teachers in the delivery of STEM-related lessons and will be mentored by regional industry partners who will provide them with a well-rounded understanding of local opportunities after graduation. According to Dr. Baker, "STEM educators are a critical need in our local P-12 schools, and through this grant project, we are excited to cultivate interest in STEM and strengthen the educator pipeline along the way." Mr. Ingle underscores the importance of the industry connections, "Engagement with industry leaders early on in students' academic careers is critical as it allows students to listen, learn, and develop a relationship with someone who has pursued a similar path."

Goals of the program include providing the student ambassadors a sense of belonging and community with fellow cohort members, connecting them to their home communities in a way that allows them see firsthand how they can have a positive impact on future generations, and connecting them with industry partners to help address regional workforce needs. Through these points of connection, Dr. Potter believes this program will serve to increase student engagement, success, and retention.

## Economic Development

### Introduction

The Innovation & Entrepreneurship (I&E) program, a functioning unit of the Office of Research and Economic Development, exists to empower Tennessee Tech students, faculty, staff, and the surrounding community to create a brighter future for themselves and the world. I&E has provided Rural Reimagined with opportunities for collaboration within their variety of events and activities that encourage students and faculty to creatively solve problems and start businesses. In addition, the I&E program has supplied Rural Reimagined with resources such as student interns and grant-writing help over the 2019-2020 year. The following section provides more information on how Rural Reimagined collaborated with I&E through their various entities, such as the Center for Rural Innovation (TCRI), TCRI CARES, and Eagle Works.



**ARISE**  
TENNESSEE TECH

# The Center for Rural Innovation

## About

The Center for Rural Innovation (TCRI) continues to successfully impact economic development across the Upper Cumberland and directly aligns with Rural Reimagined as a foundational partner. TCRI's goal is to develop and raise rural economies by creating companies, providing technical assistance to local businesses, and supporting entrepreneurs within rural tourism, technology, innovation, retail, agriculture sectors, and more. TCRI has made a tremendous impact on surrounding rural communities through spreading the message of innovation and entrepreneurship with the outcome of locally built businesses and explorative creative options. Below are TCRI success stories from the 2019-2020 year.



**“One of my favorite parts about working for TCRI is being able to match students with work opportunities that will hone their skills and help them develop into career-ready graduates. Getting to help students thrive while also helping local businesses is a win-win!” - Andrea Kruszka**





## Center for Rural Innovation

TENNESSEE TECH

### College of Business Student Accepts Rural Reimagined Internship with UCDD

TN Tech's Rural Reimagined is proud to announce that Emily Buckner, a Human Resources major, has accepted an internship with the Upper Cumberland Development District (UCDD) and the Human Resources Agency (UCHRA). Through the internship, Emily will use her organizational and communication skills to collaborate on-site with UCDD's leadership to identify and develop internships within the organization. This internship is a great way for Emily to become involved with Rural Reimagined and to gain real-world experience, while it will also create RR internships for other students in the future! UCDD's Rebecca Smith states, "We are delighted about this new phase of our partnership with Tennessee Tech and look forward to creating new opportunities for students to further their education through hands-on learning." She adds, "Collaboration through the Rural Reimagined Grand Challenge will make it possible for our agencies to recruit and develop highly qualified employees who are passionate about excellence and serving others." Regarding her internship, Emily states, "This opportunity is not only going to benefit me in using my skills in a real-world environment but in return, I will be helping my fellow colleagues in their professional lives, one of the main goals I have for my career!"

### Daniel Sukowski Rural Practicum

Rural Reimagined is excited to announce that Daniel Sukowski will conduct his practicum hours at HEP through developing surveys to collect information about the economic, workforce, and education development in Putnam County. Daniel is pursuing his Exceptional Learning PhD in Education with a concentration in Program Planning and Evaluation. Regarding his practicum hours focused on rural initiatives, Daniel states, "This is exciting! My intentions are to evaluate workforce development and education programs in order to help determine potential next steps for improving the community." As Daniel hopes to stay in evaluation once he obtains his PhD, this will be a wonderful opportunity for him to gain experience in the field.

### Vincent Okot Rural Practicum

Rural Reimagined is excited to announce that an Exceptional Learning PhD student, Vincent Okot, will conduct practicum hours assisting with a rural tourism development project through the Center for Rural Innovation. With his skill sets from the Program Planning & Evaluation (PPE) program in the College of Education, Vincent plans to use qualitative methods to help develop a tourism brand for the town of Monterey, TN. He will work with the Tennessee Department of Tourism to develop a visualization model to foster emerging tourism in rural areas. His project directly aligns with the mission of the Center for Rural Innovation, the Rural Reimagined Grand Challenge, and the TCRI CARES project.

# TCRI CARES

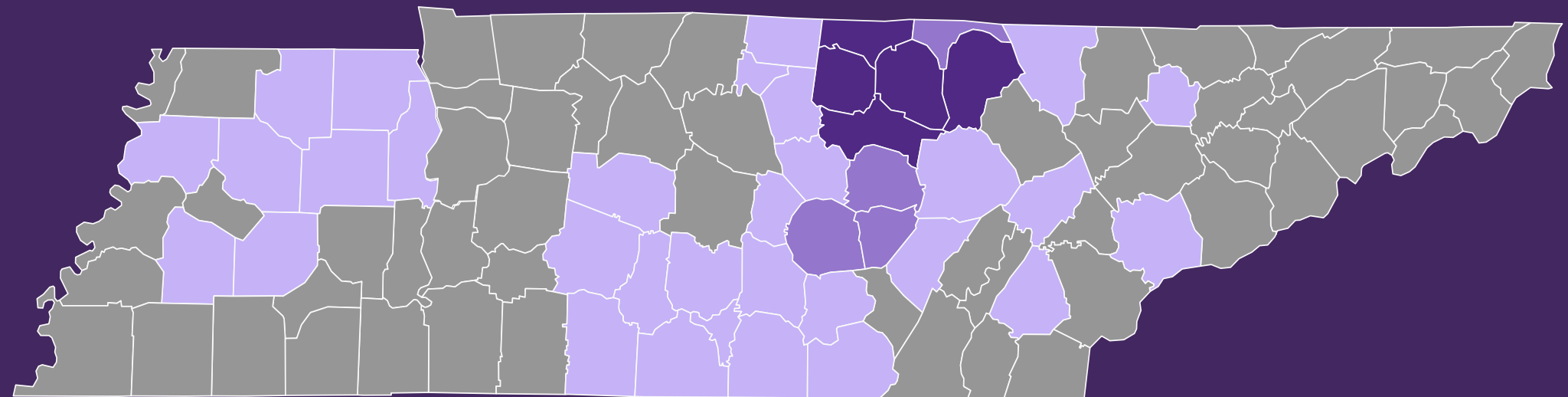
## About

Tennessee Technological University's PI Michael Aikens was awarded the TCRI CARES project grant in 2020, and it continues to leverage Rural Reimagined's assets and provide support to the initiative. TCRI CARES will respond to economic injury as a result of COVID-19 in the rural Upper Cumberland region of Tennessee by helping the region's small businesses recover and thrive throughout the pandemic and beyond. The project uses a comprehensive approach to technical assistance, student internships, commercialization and entrepreneurship support, applied research, community workforce talent support, and outreach and engagement initiatives. TCRI CARES will result in helping 200 businesses, broadcasting 50 interactive community Zoom calls, creating 20 student internships, and producing a monthly PBS television series. Below are TCRI CARES and Rural Reimagined success stories from the 2019-2020 year.

## Our **Impacted Counties**

Within 2019-2020, Rural Reimagined has reached and impacted 40 counties across and beyond the Upper Cumberland Region. Types of outreach and impacts made include rural tourism development, technical assistance, provision of student interns and practicum students, student club service projects, communications of specific needs, and more. The following map represents the different counties reached in addition to the level of Rural Reimagined activity.

Areas in dark purple represent counties with the most activity, while the level of activity decreases yet continues to be significant as the shade of purple lightens.





### Payton Womak Accepts G.A. through TCRI CARES Grant

Congratulations to Payton Womak, Ph.D student in the Program Planning & Evaluation (PPE) Program in the Department of Education, for accepting the Graduate Assistant position through TCRI CARES! Payton will collaborate in the project's research design seeking to develop and implement an accessible, sustainable, and responsive PPE model that will promote rural economic resiliency during and beyond the pandemic, specifically within our service region but also replicable in rural regions across the nation. Payton states, "After seeing the effects of the coronavirus in my rural community, I felt very drawn to the TCRI CARES project. The applied research within the grant provides me with an innovative opportunity to put my passion for rural communities to work with the intention to become stronger and better within the Upper Cumberland and across other rural areas."

### TCRI Receives \$300,000 CARES Act Grant

The Center for Rural Innovation (TCRI) has received a \$300,000 CARES Act grant through the federal Economic Development Administration (EDA). The grant will establish the TCRI CARES project, which will respond to economic injury as a result of coronavirus in the rural Upper Cumberland region of Tennessee. The project will help 200 local businesses, create 20 student internships, broadcast 50 interactive community Zoom calls, and produce a monthly PBS television series. "This project will help our region's entrepreneurs survive and thrive throughout the pandemic and beyond through a comprehensive approach to technical assistance, commercialization, applied research, and workforce development," said Michael Aikens, the TCRI CARES director and PI. Read the official EDA press release here <https://eda.gov/news/press-releases/2020/07/10/cookeville-tn.htm>

## Eagle Works

### About

The TN Tech Eagle Works Innovation and Entrepreneurship Competition encourages and supports innovation and the integration of entrepreneurship into their program at Tennessee Tech University. Student contestants from various colleges form teams focused on an innovative idea, validate their ideas with lean concepts, write a business plan, and pitch their idea to a panel of judges for a chance to win thousands in awards. TN Tech faculty are highly involved with teams and provide mentoring leadership, helping students obtain skills necessary to create their own jobs and prepare for the economy of the future. Eagle Works continues to be a great partner to Rural Reimagined, as it encourages students to use innovation and entrepreneurship to solve challenges specifically facing rural communities. The following section provides pictures from the 2019 Eagle Works competition in addition to Rural Reimagined success stories featuring Eagle Works contestants.

# Eagle Works Stories

The following stories were published in Tech Times, Tennessee Tech's newsletter.

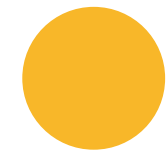
## Serious as a Heart Attack

The Grand Challenge congratulates Mackenzie Pugh, Shelley Edwards, Jordan Barnett, and Cody Bowerman for winning the Rural Reimagined Award of \$500 last week for their project "Serious as a Heart Attack!" The team of chemical engineering and nursing students are working to create a device that tests for troponin, a protein that is released into the bloodstream when a heart attack is occurring or about to occur. The device will be extremely helpful to those in rural communities with long waits for ambulances to arrive, as they can test their troponin levels to see if they are actually experiencing a heart attack or not. As Stephen Shepherd, a recent TN Tech graduate and one of the original team members states, "it would save everyone money and not waste viable resources that could potentially be used for other life-threatening emergencies." The team will use the \$500 from the challenge to continue researching and developing a prototype, and they're excited for the device's future! Click this link to watch the video: <https://youtu.be/MXr230-ZDtY>

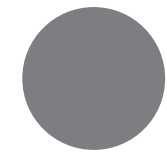
## Annalicia Larsen and Working Women Design Co.

The Center for Rural Innovation held its annual Eagle Works competition on April 18, 2020, and a special congratulations goes to Agriculture student Annalicia Larsen for winning the Rural Reimagined award of \$2,500 for the innovative idea that could most impact rural communities! Annalicia's "Working Women Design Co." provides pants specifically designed for working women that are both functional and trendy. Annalicia found her inspiration to design pants through her struggle to find ones that she liked to wear while working on her family's farm growing up. She states, "Just because I'm in Agriculture doesn't mean I can't have cute and trendy clothes on. Women have always been in Agriculture, but it's getting more popular! My overall goal is to serve these women and give them clothes they love to work in." Rural Reimagined sees a bright future of impacting rural through Working Women Design Co.

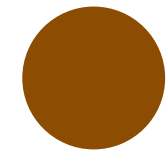
# Eagle Works 2019 Winners



1st Place - \$7,500  
Miscellaneous Men



2nd Place - \$4,000  
Trade 'Em



3rd Place - \$2,000  
Frenchi



## Eagle Works Competition

TENNESSEE TECH

# Rural Reimagined Award

This \$1,000 award is given to those who align with Rural Reimagined's initiatives to solve problems, address disparities, and transform rural communities.

## 2019 Winner



**“Miscellaneous Men is a service business mixing up multiple markets.”**

## 2020 Winner

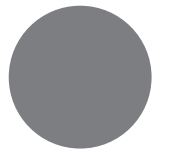


**“Working Women Design Co. is a trendy and functional brand that has clothing designed for the working woman in industries like Agriculture.”**

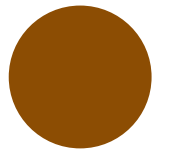
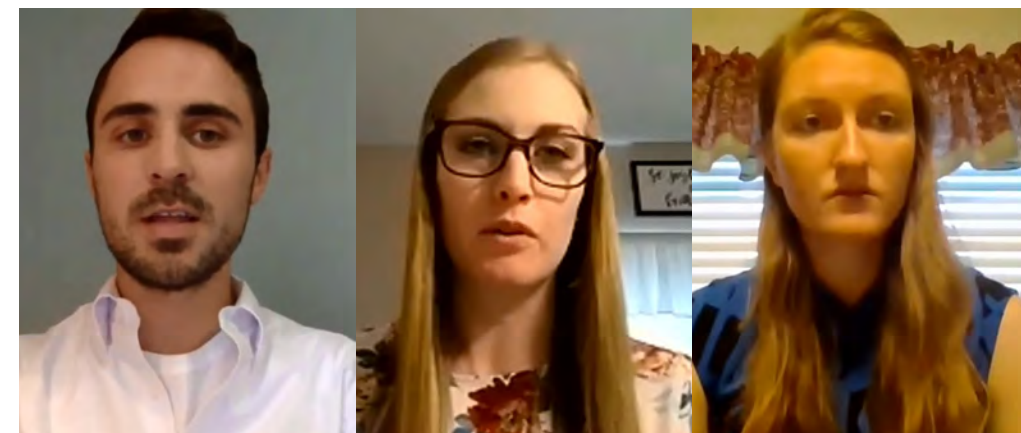
# Virtual Eagle Works 2020 Winners



**1st Place - \$10,000**  
Intubation Nation



**2nd Place - \$5,000**  
Working Women Design Co



**3rd Place - \$2,500**  
Serious as a Heart Attack



**Eagle Works Competition**

TENNESSEE TECH

# Community Introduction

In only a year after Rural Reimagined began in 2019, the initiative has served and continues to serve over 80 community partners. Partners range from within the healthcare, education, economic development, local business, and entrepreneurial sectors across the Upper Cumberland region. The goal of Rural Reimagined is to learn from communities about the challenges they face and connect them with the right resources. In addition, the connection between the initiative and surrounding communities provides TN Tech students with opportunities to submerge themselves into rural ecosystems and learn experientially. Rural Reimagined also provides partners with resources such as student interns, volunteers, and marketing/social media help. Although the COVID-19 pandemic halted the expansion of some partnerships, such as the Trousdale County PTA education initiative, Rural Reimagined continues to maintain connections and remotely assist the community. The following section provides success stories and photos from some of Rural Reimagined's 2019-2020 community partners.

## Rural Reimagined Partners with Livingston/Overton County Chamber of Commerce

TN Tech College of Business student workers will assist the Livingston/Overton Director of Tourism in creating social media posts, websites, and other forms of public relations to promote tourism in Overton County. The rural city of Livingston has many exciting things happening, including the creation of murals in their parks and town.

## Rural Reimagined Partners with Trousdale County PTA

The Grand Challenge is excited to announce its new partnership and collaboration with the Trousdale County PTA! We will be collaborating with them on their new comprehensive health education initiative, focused on improving the health of communities and educating for prevention.

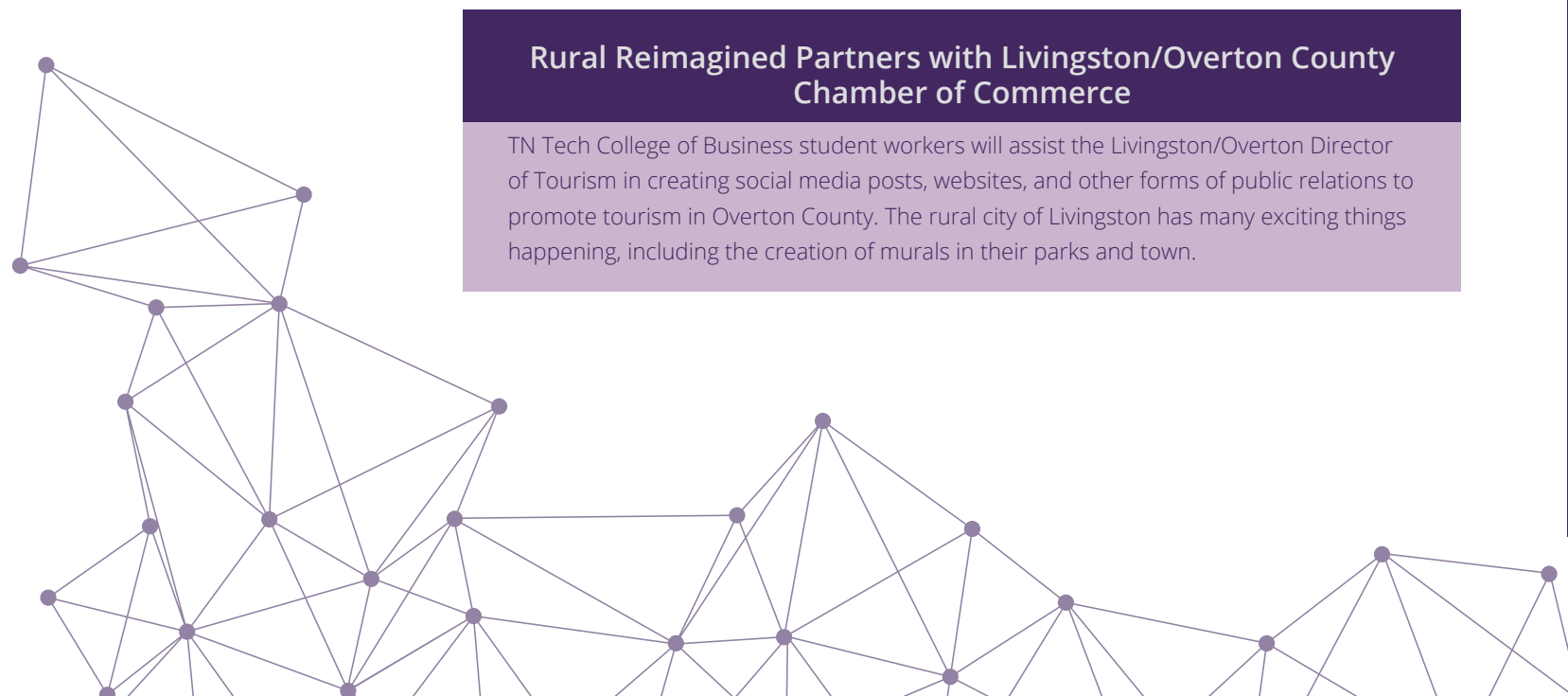


TN Tech Alum Spotlight on Behalf of Rural Reimagined: Jordan Hughett and Rugby

## SOARD Properties Launches New Website

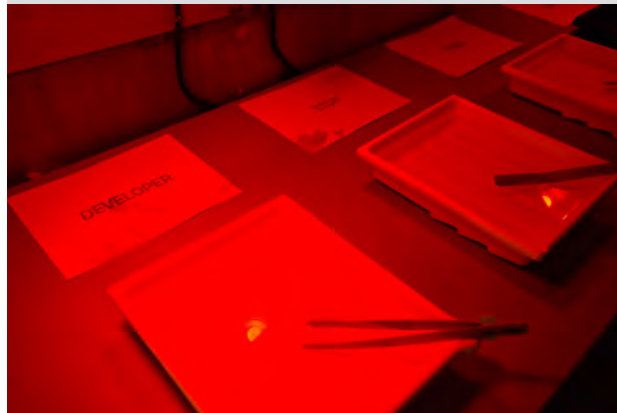
The TN Tech Center for Rural Innovation (TCRI) is excited to share about Soard Properties, a new client success story. Soard Properties has provided TN Tech students and surrounding communities with apartments and houses for over 40 years, but they did so without a website. With the help of technical assistance from TCRI, Soard Properties now has a new website that features their various buildings. Kinsey Potter, a Ph.D student and the creator of the website states, "TCRI provided me with a great opportunity to learn website development skills and gain real life experience serving local businesses." The management of Soard Properties states, "As many of our tenants are TTU students, Management of Soard Properties was excited to collaborate with Kinsey Potter on the website Design. This was a great experience for us, and we look forward to working with TTU in the future." Visit the website here: <https://www.soardprop.com/>.

After partnering with Rugby, a Victorian village founded in 1880, Rural Reimagined and the Center for Rural Innovation feature alum Jordan Hughett for his success and continuing work at Rugby. Jordan graduated with a History and Education Bachelor's in 2019 and states, "I have loved history since I was a small child, and history, music, and faith are the cornerstones of my life." After earning a fellowship playing banjo to travel and meet other ballad singers, Jordan played music at Historic Rugby events. He says, "music there allowed me to meet the people who lived in the village who would later be colleagues and friends." Jordan spent a summer working at Rugby, connecting history, music, and faith to it. He continues as Rugby's Development Associate and states, "I love being able to take the story of Rugby and present it to people in a way that they can find interesting."



# Dr. Blair's Cameraless Workshop

Rural Reimagined recognizes Dr. Jeremy Blair, a Professor of Art Education, for his Cameraless Photography Workshop in Historic Rugby.



Through this workshop, participants experimented with cameraless photography methods by creating botanical photograms in a darkroom. Dr. Blair taught participants basic darkroom techniques, how to forage outside for materials, and methods for creating stunning black and white photograms without a camera.

## Dr. Blair states,

"I taught this workshop at the Learning Center in Rugby and transformed their furnace room into a darkroom. I then introduced a technique called Cameraless Photography or Photograms where participants forage for items outside, place them on photosensitive paper in the darkroom, expose them with a flashlight, and develop them through a traditional darkroom process."



The workshop was ideal for beginners and explored historic photography methods inspired by the Victorian era.

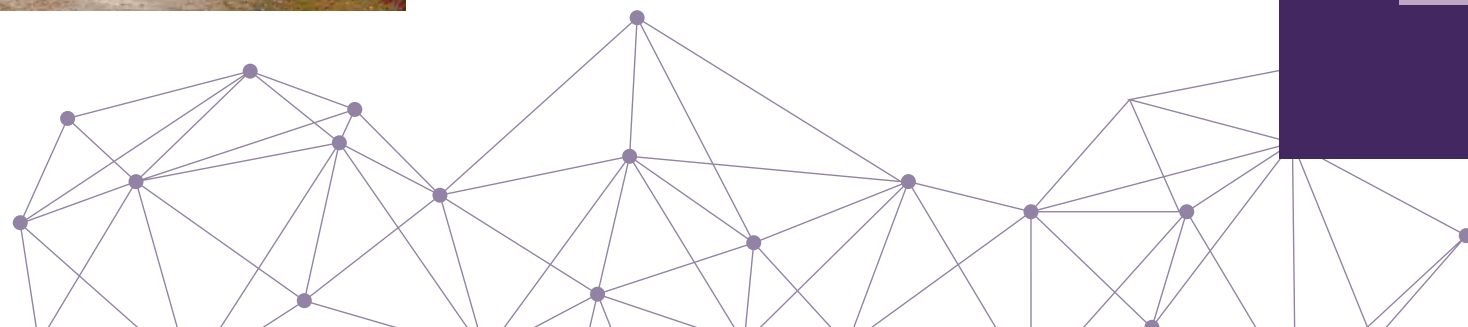


## Community Partnership: Jill Stalnaker

Rural Reimagined recognizes a developing community partnership with Ms. Jill Stalnaker, an entrepreneur and local business owner. Ms. Stalnaker is the founder of the Leaning Tree Agency, a music agency that connects with authentic and unique artists. In addition, Ms. Stalnaker directs the MECCA (Music Enrichment for Community Centered Advancement) Music Festival, a Tennessee festival that travels across the state each year, showcasing undiscovered talent in rural TN. Rural Reimagined's partner, the TCRI, has connected Ms. Stalnaker with intern Grant Crumpton, a digital design major. Grant will support MECCA by using his software development and coding skills to design the website. Regarding her partnership with RR, Ms. Stalnaker states, "Rural Reimagined is giving me the opportunity to utilize the best they have to offer to grow my business!" Rural Reimagined is excited to see Grant's progress and the future of this partnership with MECCA and the Leaning Tree Agency.

## Fentress County Seal

Through the assistance of Tennessee Tech graphic design major and Center for Rural Innovation intern, Jesse Filoteo, the Fentress County Chamber of Commerce and Executive's Office have officially created an original Fentress County Seal, which was unanimously voted to officially represent the county on February 22nd. Filoteo utilized what he learned at TN Tech to create a design that he believed would impact the county and his own future in design. He states, "I'm happy to say I think we're all very pleased for this seal to represent Fentress County, Tennessee." The Fentress County Executive's Office and County Commission will hold a press release celebration for the official unveiling of the county seal on Friday, March 12th, at 10 am in Jamestown, TN. Fentress County Executive Johnson states, "I am so proud to finally see an official seal presented to the citizens of Fentress County that will stand the test of time and last for generations."



# Monterey Branding Partnership

Rural Reimagined recognizes Dr. Jeremy Blair, a Professor of Art Education, for his Cameraless Photography Workshop in Historic Rugby.



## Dr. Blair states,

"I taught this workshop at the Learning Center in Rugby and transformed their furnace room into a darkroom. I then introduced a technique called Cameraless Photography or Photograms where participants forage for items outside, place them on photosensitive paper in the darkroom, expose them with a flashlight, and develop them through a traditional darkroom process."

# Assessment of Need

## Program Overview

In March 2019, Tennessee Technological University (TN Tech) issued a university-wide Grand Challenge initiative called Rural Reimagined. Grand Challenges are put in place when an institution or university sees a problem or need that can be helped with pre-established resources, and many rural problems surround TN Tech. Thus, the initiative was created to combine the leverages and skill-sets of all faculty, students, and staff to harness technology, innovation, research, and more towards solving problems in rural areas. Problems range from struggles of local businesses, access to fresh water and produce, the era of the opioid problem, access to healthcare and childcare, access to wifi and internet, and access to education. Through providing University resources to solve these problems, Rural Reimagined aligns directly with Governor Bill Lee's executive order to serve rural communities. Within one year, Rural Reimagined has succeeded in containing the involvement of over 1,000 students and 50 faculty to complete and continue working on over 50 projects that help to serve the surrounding communities of nine distressed, rural counties regarding the above stated problems. Projects stem from partners such as the Center for Rural Innovation and the Eagle Works Innovation and Entrepreneurship program. Rural Reimagined will continue for at least five years as an initiative with a program structure, and the University hopes to see even further involvement both within the campus and the community.

## Definition of Program's Need

Rural Reimagined needs:

*An organized process for promoting the initiative to both the university and to the community for further success in identifying rural challenges.*

Rural Reimagined currently promotes its program initiative through article posts on the University's blog. The blog is posted three times a week, and Rural Reimagined submits an article for every post. The articles range from Rural Reimagined updates to faculty, student, and staff spotlights recognizing the work they are doing related to the program. Rural Reimagined also has implemented a student club for further student involvement, and its partner Eagle Works of the Center for Rural Innovation awards distinct prizes to students whose ideas represent rural issues. However, even with these strategies, a large amount of the community and the University are unaware of the opportunities that the program has to offer. The program needs a better organized process of sharing its mission for wider recognition.

*An organized process for obtaining the research, resources, and faculty needed to solve those challenges.*

Research, resources, and involvement are currently obtained through word of mouth connections across campus from the Rural Reimagined committee (the committee is explained later in the section Focus Groups). The program needs a better organized process to obtain a wider span of involvement.

## Sources of Information

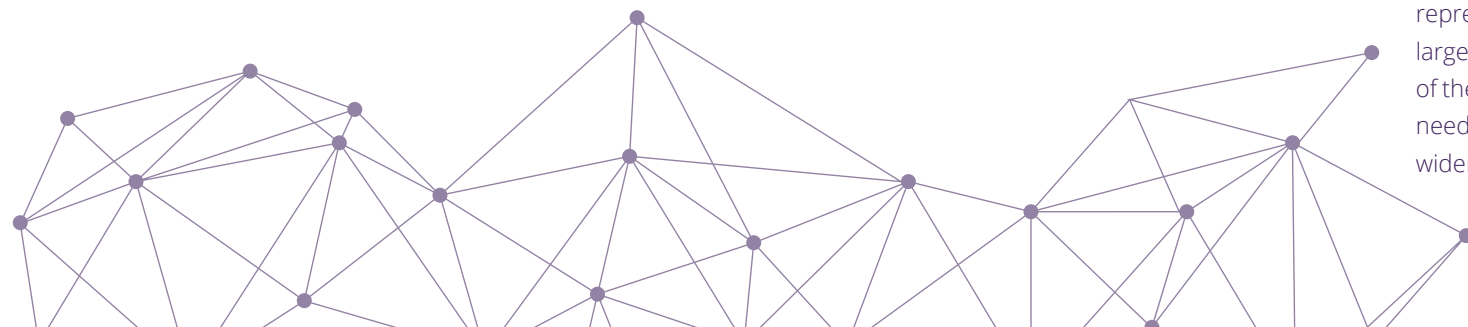
Currently, Rural Reimagined has assisted in solving rural problems through providing student volunteers, public relations interns, teaching faculty, research, and assistance in grant writing to over 50 projects. The term "projects" refer to individual counties, institutions, towns, businesses, or community members that reach out to Rural Reimagined for their partnership in assistance in solving a known problem in their area. These projects provide the following sources of information regarding the current needs in surrounding rural communities:

- The need for access to health education
- The need for fresh water, produce, and energy
- The need for local farmers to sell produce
- The need for wifi routers in homes without access to internet
- The struggle for local businesses to promote themselves and create a foundation
- The need for better social media marketing in small, economically challenged towns
- The teacher shortages and low retention rates in rural schools
- The non-existent access to fast response (ambulances, fire trucks, etc.) to those in rural communities

## Current Situation

### Population to be Studied

The population to be studied consist of persons in the surrounding nine distressed rural communities. These communities are those in each of the surrounding 14 counties. Currently, Rural Reimagined has approximately 50 partnerships in rural communities that are partnered with the program. However, that number continues to grow within the 14 counties as more rural institutions, programs, schools, educators, farmers, and community members hear about the opportunities that Rural Reimagined has to offer.





## Assessment of **Need** *(Continued)*

### *Current Resources in Community*

The following current resources in the community (the rural counties themselves) provide Rural Reimagined with the needed settings, leaders, and products to help solve problems with the assistance of TN Tech's faculty, staff, students, research, and education:

- Local libraries with free portable wifi routers, spaces for gatherings, loanable books, and space/robotics education equipment
- Churches with spaces for community gatherings
- Rural schools with spaces for community gatherings, educational equipment, and educators.
- Department of Child Services with staff, caregivers, and information on healthy child environments and adoption
- Department of Human Services with access to information on county amenities
- Cookeville Regional Medical Center with access to healthcare and health educators
- Senior Care Center with spaces for community gatherings and safe places for seniors

### **Social Indicators of Need**

One potential problem for the Rural Reimagined program currently is its lack of social indicators of need. Rural Reimagined's partners contact the program upon word of mouth with their individual problems. It is rare for Rural Reimagined to contact the individual partners themselves unless the partners are easily accessible (such as advertising themselves or having already established themselves as an institution in a rural community). An example of current development of partnerships would be as follows:

*Rural Reimagined is currently partnered with the Putnam County library to provide student educators for their programs in STEM education, robotics education, and space exploration education. Phil Schaller, the director of the library, reached out to Rural Reimagined after hearing a presentation from Dr. Jeremy Blair and Kinsey Potter (both Rural Reimagined committee members) at the Leadership Putnam conference. He mentioned that, although the library had the educational equipment (robots, etc.), they had no access to educators.*

*Rural Reimagined connected him with a Masters STEM education student as well as the robotics club at TN Tech. The students are now using practicum hours as well as academic service hours to educate community students at the library about those types of education. However, the partnership*

*would never have been initiated without the reaching out of the director.*

The above scenario, although successful, represents the program's lack of social indicators of need. Rural Reimagined needs a system to identify what the mass of rural communities needs. Thus, we need to implement community surveys of need. Surveys would better organize partnerships, provide social indicators of need, and better organize a strategy for the program to obtain needed resources for different communities.

### **Key Informants**

Rural Reimagined is currently partnered with all 14 chambers of commerce in the surrounding distressed, rural communities. The chambers of commerce act as distinct, helpful key informants as each have personal connections to the members of their individual communities. Since each county will undoubtedly have different unmet needs and provide different resources, the chambers of commerce act as both exclusive contacts in addition to providing insight into their prospective counties.

### *Focus Groups*

The acting focus group of Rural Reimagined is the Grand Challenge Committee. The committee consists of 14 faculty and staff with one student graduate assistant and undergraduate student representative. The committee has faculty from the following departments: Chemistry, Biology, Communications, Exercise Science, and Fine Arts. Staff on the committee stem from the Communications, Marketing, Human Resources, and Residential Life departments. The committee consists of self-selected early adopters and meets bi-monthly to discuss individual college and department updates, future plans, past successes, and prominent needs. The committee acts as a wonderful focus group for the program, but the current exponential rate at which the program is growing calls for more than 15 faculty. The program must have either other focus groups or open forums, as will be discussed below.

### *Open Forums*

Currently, Rural Reimagined does not have open forums. The graduate student of the committee is working with the Provost of the University to implement sub-advisory groups for faculty members not on the committee, which will act as open forums. The current plan is to designate one faculty per department of each individual college. Once each college has a faculty member from each of its departments, the college will

## Assessment of **Need** *(Continued)*

meet as an open forum with one faculty representative from the committee. The goal of these groups would be to get direct updates from each college back to the committee regarding their implementation of the initiative into their coursework, while the groups will also serve as direct pathways from the committee to update each individual department.

Another open forum that needs to be implemented is one with direct connection to communities. An open forum that has representatives from each chamber of commerce in addition to a committee representative would act in equality to the faculty open forums, yet with a community input rather than a university input.

### **Conclusion**

Rural Reimagined is a successful program that continues to grow in its successes, projects, partnerships, and university involvement. However, with the growth of projects comes the inability to serve all with the limited involvement of representatives from the university. Similarly, it is detrimental to only have contact to projects through their direct contact. The program must implement new strategies, like community surveys, to obtain and measure distinct community needs to be successful in serving those needs with current resources. Open forums must be implemented to delegate projects to the right departments and to truly hear back from the community. With community surveys and open forums, Rural Reimagined will have the necessary strategies to affect the community, involve each county equally, involve the university, and delegate projects to produce the utmost success.





RECEIVED  
2019 JAN 29 AM 10:21  
SECRETARY OF STATE  
PUBLICATIONS

STATE OF TENNESSEE  
**EXECUTIVE ORDER**  
BY THE GOVERNOR

No. 1

**AN ORDER REQUIRING A STATEMENT OF RURAL IMPACT AND  
RECOMMENDATIONS FOR BETTER SERVING RURAL TENNESSEANS FROM  
ALL EXECUTIVE BRANCH DEPARTMENTS**

**WHEREAS**, this Administration recognizes that Tennessee's economic growth and prosperity has reached historic levels; and

**WHEREAS**, despite such growth and prosperity, Tennessee's rural citizens face challenges unique to their geography that often require a unique response, including:

15 of Tennessee's rural counties qualify as economically distressed, ranking among the nation's 10% most distressed counties based upon an annual index of unemployment, income, and poverty; and

Health outcomes remain a challenge for rural communities, including shortages in access to primary care; and

Educational attainment and labor workforce participation are continuing to lag within our rural communities; and

**WHEREAS**, it is the policy of this Administration to ensure that all Tennesseans are efficiently and effectively served by their government; and

**WHEREAS**, this Administration recognizes that achieving this policy will require a continued focus on the unique challenges and responses for rural Tennesseans.

**NOW THEREFORE**, I, Bill Lee, Governor of the State of Tennessee, by virtue of the power and authority vested in me by the Tennessee Constitution and the laws of Tennessee, do hereby declare that it is the unwavering policy of the Executive Branch to remain accountable for how its policies impact rural Tennesseans. Accordingly, I hereby direct and order that:

1. No later than May 31, 2019, the commissioner of each of the departments of the executive branch shall provide to the Governor a Statement of Rural Impact, which shall include:
  - a. A statement of the department's mission and how that mission may uniquely impact rural Tennesseans;
  - b. A statement of the approximate number of taxpayers or customers served by the department who live in a rural community;
  - c. A comprehensive description of the department's initiatives adopted or funded in the last four years to specifically address challenges unique to rural communities;
  - d. A summary of the department's participation in the Governor's Rural Task Force convened from 2015 to 2016 and the status of any items, tasks, or initiatives addressed by the Task Force that impact, or are to be executed by, the department;
2. No later than June 30, 2019, the commissioner of each of the departments of the executive branch shall provide to the Governor recommendations for improving and making more efficient the department's service of rural Tennesseans.
3. No later than March 8, 2019, the commissioner of each of the departments of the executive branch shall submit to the Governor:
  - a. A report regarding the department's progress toward completion of the directives of this Order;
  - b. The name and title of an employee designated as the department's point of contact regarding the fulfillment of the directives of this Order.
4. The Office of Customer Focused Government, under the direction of the Chief Operating Officer and in consultation with the Governor's Office, is charged with providing to all departments staff and technical support and any other assistance as reasonably requested for carrying out this Order.
5. All executive branch departments, agencies, boards and commissions, and any other divisions of state government shall fully cooperate with the Office of Customer Focused Government and other departments of the executive branch in carrying out this Order and shall provide staff support and any other assistance as reasonably requested.
6. This Order shall remain in effect through June 30, 2019, at which time it shall cease and be of no further force or effect.

**IN WITNESS WHEREOF**, I have subscribed my signature and caused the Great Seal of the State of Tennessee to be affixed this 23rd day of January, 2019.

  
 GOVERNOR

ATTEST:

  
 SECRETARY OF STATE



# Our **Strategic Partners**

## National



## State



# Our **Strategic Partners** *(Continued)*

## Regional



## Next Steps...

As 2020 closes, Rural Reimagined is excited for the future partnerships, opportunities for collaboration, and campus-wide involvement ahead. In Historic Rugby, we will continue to provide support through marketing outreach, student internships, technical assistance, and more. Our vision for Tourism Development is to assist every county in the Upper Cumberland and to collaborate with regional partners. As TCRI CARES was activated in August 2020, we expect our next Annual Report in 2022 to contain many more updates and success stories. The number of Rural Reimagined alumni will continue to increase this coming year, and we look forward to their involvement. The number of student internships and practicum opportunities that we can offer will increase in the coming year as our collaborations with colleges across campus continue to expand. We will also continue to support the Oakley STEM Center in their newly funded Ambassadors Program. Our next Annual Report will contain all updates and success stories from the 2021-22 fiscal year. The above ongoing projects represent only a small glimpse of the future of Rural Reimagined, and we invite all community members, students, staff, faculty, entrepreneurs, and businesses to get involved.







**Tennessee**  
**TECH**

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