

2023 ANNUAL REPORT



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

RESEARCH PARK
AT CHEROKEE FARM

MESSAGE FROM THE PRESIDENT/CEO

The University of Tennessee, Knoxville (UT) is on the rise! Enrollment has increased by nearly 25% in the past five years to 36,000 students in AY'23-'24. Sponsored project revenues increased 80% in just three years to \$428M in FY'23. Major new research initiatives announced during 2023 include a prestigious National Science Foundation Materials Research Science and Engineering Center and the renewal by the Department of Energy of the UT- led Manufacturing USA Institute called IACMI. The UT Research Park at Cherokee Farm is also on the rise! With leadership provided by the Cherokee Farm Development Corporation (CFDC), ground was broken on Innovation South, the fourth major facility in the Park and the first true public-private partnership. In addition, two

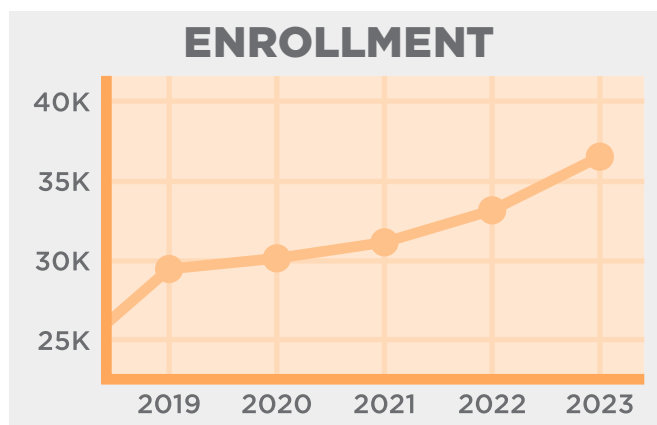


new programmatic partnerships with the UT Medical Center were launched in existing buildings: the Nurses Scholars Program at Innovation North and the Center for Precision Health at the UTMC Orthopedics Institute.

CFDC's Spark Innovation Center, which is located at the Park, continues to receive national acclaim as we provide technology-based startups with support from local, state, and federal partners. In just 3 years, Spark startups have raised \$50 million, created more than 50 new high-paying jobs, and engaged more than 25 UT interns.

CFDC is a non-profit subsidiary of the UT Research Foundation whose ties to UT's flagship campus in Knoxville were significantly strengthened in 2023. Led by a diverse Board of Directors chaired by UT's Vice Chancellor for Research, Innovation, and Economic Development, and managed day-to-day by a small team of passionate, dedicated individuals, the UT Research Park's best days are clearly ahead of us!

UNIVERSITY ON THE RISE



FY 2023 SPONSORED PROJECT REVENUES

Funding received by the UT community over the last 3 years:

FY23: \$428 million

FY22: \$261 million

FY21: \$238 million

BY THE NUMBERS

UT RESEARCH PARK AT A GLANCE



Total Acreage:
150 acres



Investment:
\$152 million



Available For
Development:
70 acres



Tenants:
20



Square Footage:
360,000 SF



Employees:
800

INNOVATION GATEWAYS @ THE PARK

Advanced Materials and
Manufacturing

Human Health and Wellness

Future Mobility

Artificial Intelligence

Energy and Environment



CHEROKEE FARM DEVELOPMENT CORPORATION STAFF



Tom Rogers
President
and CEO



Rickey McCallum
Vice President
of Business
Development



Emily Pedder
Operations
Manager



Lilly Tench
Director of
the Spark
Innovation
Center



John Bruck
Co-Founder and
Lead Advisor
of the Spark
Innovation Center



Carol Seamons
Director of
Engagement



Bill Malkes
Expert-In-
Residence

BOARD OF DIRECTORS CHEROKEE FARM DEVELOPMENT CORPORATION

Deborah Crawford Vice Chancellor, Research, Innovation & Economic Development, University of Tennessee

Brandon Bruce Managing Director of Techstars, CEO of Uncat

Victoria Hirschberg Assistant Vice President, Research, Outreach and Economic Development,
University of Tennessee System

Sharon Pryse CEO, The Trust Company

Harry Boston President & CEO, Boston Government Services, LLC

Maha Krishnamurthy President, UT Research Foundation

Joe Hoagland Vice President of Enterprise Relations and Innovation, TVA

Lori Chamberlain CFO, Aegis Health Group

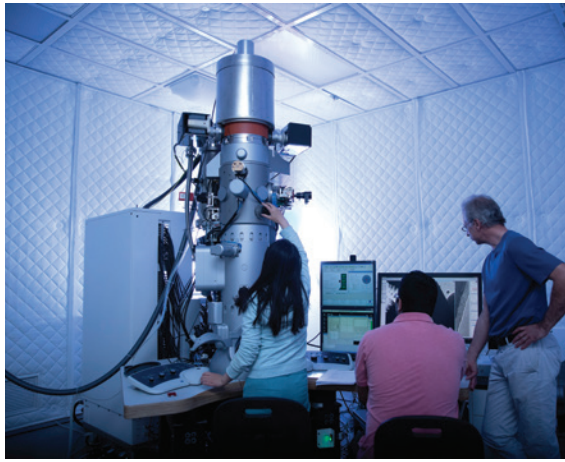
Bill Mason Attorney at Law, Kennerly Montgomery

CHEROKEE FARMS PROPERTIES INCORPORATED

Hank Dye Former President of Public and Government Relations, University of Tennessee

Hayden Oakley Sr. Vice President Relationship Manager, Truist

Heather Morgan Previous Asst. VP for Research, Outreach & Economic Development, University of Tennessee



RESEARCH PARK AT CHEROKEE FARM

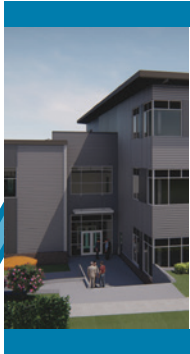


EXISTING & PROPOSED D



INNOVATION NORTH

A public-private partnership that currently houses six tenants collaborating with UT.



PROPOSED OUTDOOR CULTURAL AND RECREATIONAL CENTER

A unique facility designed by UT Architecture students intended to serve the university and the community at large.

PROPOSED HOTEL CONFERENCE CENTER

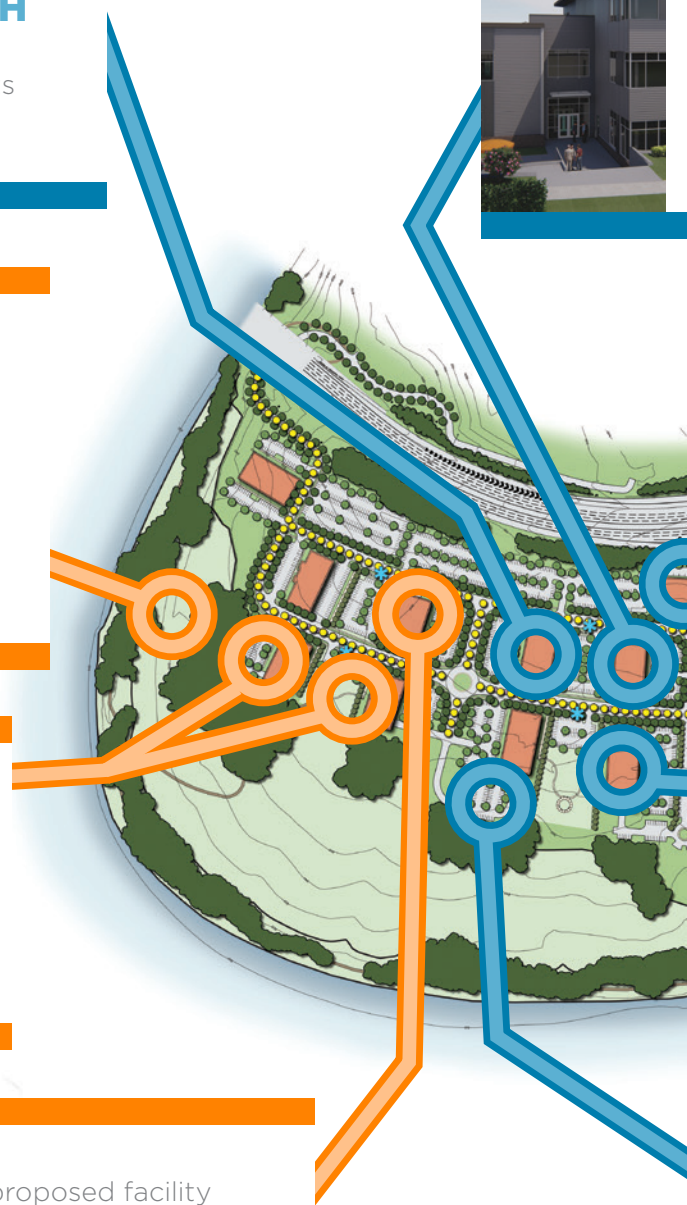
Currently seeking proposals from qualified developers to plan, design, finance, construct, and operate a hotel/conference center.



PROPOSED



A proposed facility focused on laboratory and office space for some of the region's most promising technology startups.



DEVELOPMENT PROJECTS

INNOVATION SOUTH

An 85,000 square foot facility to be anchored by UT advanced materials and manufacturing R&D with additional space for public and private sector collaborators.

ADVANCED ORTHOPAEDIC INSTITUTE

93,000 square foot ambulatory surgery center and UT Center for Precision Health.



FUTURE DEVELOPMENT AREAS

Additional sites to be developed as new Alcoa Highway interchange serving the Research Park is completed.

INSTITUTE FOR ADVANCED MATERIALS AND MANUFACTURING

144,000 square foot Institute headquarters and host to Spark startups.



MILLHORN LANDING

In Honor of Dr. David E. Millhorn, UT Executive Vice President (2005-2017), whose vision, Commitment and Dedication to the UT Research Park at Cherokee Farm made this project possible.



The Spark Innovation Center was founded in 2020 by John Bruck and Tom Rogers to support, attract, and retain the Nation's most promising technology startup companies in Tennessee.

Spark's success is contingent on the following components:

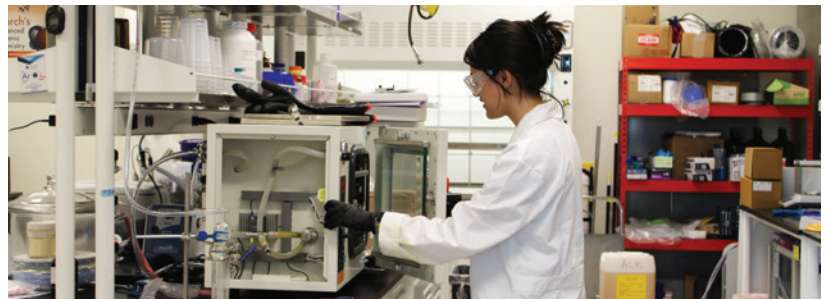
- Promising tech-based founders with ideas that can change the world;
- Great mentors who contribute their experience and expertise, both as staff and as volunteers;
- Connecting founders and their companies with resources here in the region and beyond; and
- Committed financial support from a growing number of local, state, and federal sources.

IMPACT

In only 3 years of operation, Spark has achieved the following impact:

- Companies Served: **29**
- Non-Dilutive Funding Raised: **\$33.3 Million**
- Equity Investment: **\$19.5 Million**
- Revenue: **\$3.1 Million**
- Jobs Created: **57**
- Number of Employees Recruited to Knoxville: **10**
- Interns Supported: **34**

SPARK INNOVATION CENTER



Spark currently operates three primary programs:

The Spark Incubator: The Spark Incubator provides laboratory and office space to growing companies working in cleantech, materials, and biotech. The incubator also provides expert mentoring and programming to cohort members for up to two years.

The Spark Cleantech Accelerator: The Spark Cleantech Accelerator is an intense 12-week program designed to bring promising cleantech innovations to market, drawing founders from across the Nation and around the world to East Tennessee. In 2023 and for the first time, Spark partnered with Oak Ridge National Lab's Innovation Crossroads program, providing support and advice to twice as many companies as in the previous year.

The Spark Scholars Program: Through a partnership with the Center for Material's Processing at UT, the Spark Scholars Program connects Spark startup companies with UT interns, providing students with valuable experience in young entrepreneurial companies, and companies with access to UT talent. To date, Spark startups have employed 26 student interns, several of whom have gone on to become full-time employees.

SPARK INCUBATOR CLIENTS

2020-2022

Eonix
SkyNano
American Nanotechnologies, Inc. (ANI)
Qubit Engineering
Neptune Fluid Flow Systems
Shift Thermal
CQ Insights
Quantal

2022-2024

Addiguru
BECQ
FC RENEW
Holocene
Orion Therapeutics
RAEV
Safire

SPARK CLEANTECH ACCELERATOR CLIENTS

2022

RAEV
Windfall
Fraktal
GroundStar
Green Llama

2023

Agri-Tech (CTA)
Inno-Neat (CTA)
Vitruvian (CTA)
Algaeo (CTA)
Aligned Composites (CTA)
Farm to Flame (CTA)
Innovation Crossroads Cohort 7
Perseus Materials (IC)
EarthEn Inc. (IC)
Qubit Engineering (IC)
Re-Du (IC)
ThermaMatrix, Inc. (IC)
ThermoVerse (IC)
Skuld LLC (IC)

SPARK INNOVATION CENTER 2023 UPDATES

A Growing Team. This year, we are excited to add three additional members to the Spark team:

- **Lilly Tench**, Director, Spark Innovation Center
- **Emily Pedder**, Operations Manager
- **Bill Malkes**, Spark Expert-in-Residence

Oak Ridge National Lab Innovation

Crossroads Partnership. This year, Oak Ridge National Lab's Innovation Crossroads Program joined forces with the Spark Innovation Center to send their newest cohort of 7 founders through the 12-week Spark Cleantech Accelerator, alongside 6 founders selected by Spark. This expanded cohort of 13 startups allowed Spark to not only support more growing companies, but also to establish a stronger sense of community among new founders working in cleantech in East Tennessee.

Appalachian Regional Commission Support.

This year the Spark Innovation Center earned national recognition by securing a federal grant from the Appalachian Regional Commission's POWER program. The grant will provide \$600,000 over the next three years to support expansion of Spark programming and help transition the Appalachian Region towards a clean energy future.

FINANCIAL SUPPORT FOR SPARK



INSTITUTE FOR ADVANCED MATERIALS AND MANUFACTURING

The UT Institute for Advanced Materials and Manufacturing (IAMM) is headquartered at the UT Research Park in a 140,000 square-foot facility that includes state-of-the-art laboratories and instruments, collaboration spaces, classrooms, and offices.

IAMM HQ houses 50 faculty across three UT colleges and numerous academic departments to create the scale, synergies, and multidisciplinary ecosystem essential to advance research and innovation, support partnerships with for- and not-for-profit organizations to commercialize research outcomes, and, prepare a diverse workforce for the Tennessee industries of tomorrow. Supporting the co-location of multidisciplinary, multi-sector R&D teams, including Spark start-ups, the IAMM HQ community explores timely and complex research themes that promise to revolutionize the products and services of the future.

IAMM HQ also houses seven state-of-the-art research cores:

- The Advanced Photoelectron Spectrometer lab supports the analysis of chemical and electronic properties of various forms of condensed matter.
- The Electromagnetic Properties Lab provides access to both Physical Property Measurement Systems (PPMS) and SQUID Vibrating Sample Magnetometers (SVSM).
- The Electron Microscopy Core provides access to state-of-the-art electron and ion beam microscopy resources.
- The Ion Beam Materials Laboratory, supports ion beam analysis, ion implantation, ion beam modification and ion irradiation services. In 2023, UT upgraded this core at a cost of \$2M to add a 3rd ion beamline and integrated TEM system with nanometer scale laser processing capabilities.
- Molecular beam epitaxy with in situ scanning probe microscopy, providing services related to epitaxial oxide thin film synthesis and atomic-scale topographic and spectroscopic characterization.
- The Polymer Characterization Laboratory, provides access to instruments essential for characterization of polymers and other advanced materials.
- The X-ray Diffraction Core Facility provides researchers with access to conventional XRD, grazing incidence XRD, high-resolution XRD, texture/pole figure experiments, fiber experiments, and high temperature experiments.



INNOVATION NORTH

Innovation North was the second development in the UT Research Park, and was developed in a unique partnership between Partners Development and the Research Park's for-profit subsidiary. The 44,000 square foot building was completed in 2017, and was almost immediately leased to companies eager to collaborate with university faculty and students.

2023 saw an exciting new collaboration and tenant for Innovation North: the Nursing Scholars Program, a partnership between the UT College of Nursing and the UT Medical Center. This academic-practice partnership offers nursing student an opportunity to learn and train at UTMHC, the region's academic medical center. Students in the program are awarded scholarship tuition from UTMHC with a three-year work commitment post-graduation.



Civil & Environmental
Consultants, Inc.

VOLKSWAGEN

GROUP OF AMERICA



UNIVERSITY OF TENNESSEE MEDICAL CENTER ORTHOPAEDIC INSTITUTE

The Orthopaedic Institute opened in June 2022, bringing a new level of orthopedic care to the East Tennessee region. The 93,000 square foot facility offers ambulatory surgical outpatient services and advanced MRI imaging, clinical examination rooms, radiologic services, physical therapy, and even orthopedic urgent care.

The top floor of the facility houses the UT Center for Precision Health and supports R&D collaborations among UT, UT Medical Center, Cherokee Health Systems, the UT Health Science Center Graduate School of Medicine, and industry partners.

The Center for Precision Health will also include a Spark Life Sciences Incubator to support and encourage commercialization of the great ideas that will emerge from collaborative research in areas such as advanced bio-composites, computational medicine, and community health and wellness.

Keep watching for more news about these exciting R&D collaborations in the coming year!





INNOVATION SOUTH

The most visible indicator of progress on the UT Research Park in 2023 was the construction of Innovation South. A groundbreaking event was held on July 3, and construction is well underway on the Park's first real public- private partnership between Partners Development and UT.

UT has leased 39,000 square feet to conduct collaborative R&D in areas such as Advanced Composites and Smart Manufacturing. The remainder of the 85,000 square foot building has been fully leased to organizations interested in working with the University, including the U.S. Forest Service, New Day Diagnostics, IACMI - The Composites Institute, and Trimble MEP. In addition, CFDC will relocate its administrative offices to Innovation South upon its completion in late 2024.





PROJECTS ON THE HORIZON IN 2024

2024

- A Request for Proposals for a **Hotel-Conference Center** will be released in early 2024 with plans to begin construction during the year.
- A **Spark Innovation Center** facility has been designed and awaits financing to serve as a central location for tech-based startups in the region.
- Work has begun on a new **Alcoa Highway Interchange** that will change the ingress and egress to the park.

SPECIAL THANKS

Every successful organization needs partners to achieve its goals. We'd like to extend special thanks to these partners in 2023:

- Three Roots Capital
- Appalachian Community Capital
- LACI Debt Fund
- Centrepolis Accelerator
- Evergreen Climate Innovations
- mHUB
- Oak Ridge National Laboratory
- Tennessee Advanced Energy Business Council
- Launch Tennessee
- City of Knoxville
- U.S. Department of Energy
- U.S. Department of Commerce
- Appalachian Regional commission
- Innov865 Alliance
- Partners Development
- PYA
- Realty Trust Group
- MBI Companies
- Barber McMurray and Associates
- UT Medical Center
- Truist
- Queen City Angels

We'd also like to extend our appreciation to our friends and colleagues at UT who lent their time and support to help make the UT Research Park at Cherokee Farm an integral part of their strategic initiatives.





RESEARCH PARK AT CHEROKEE FARM

TNResearchPark.org



UTResearchPark



TNResearchPark

info@tnresearchpark.org

FOR THE MOST UP-TO-DATE
INFORMATION ABOUT THE
UT RESEARCH PARK
SCAN THIS QR CODE

